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SWEET'S CATALOG FILE

A File of Manufacturers' Catalogs designed for the use of Architects, Engineers, Contractors and others whose practice it is to select, specify or purchase building materials, equipment and allied services.

SWEET'S CATALOG SERVICE
DIVISION OF F. W. DODGE CORPORATION
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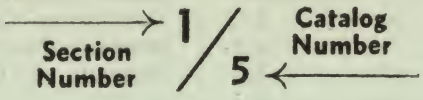

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Preservatives

See Preservatives—Wood

Veneer

See Veneers

Wall Coverings

See Veneers

Work

See Cabinet Work—Wood; Trim—Wood

AMERICAN LUMBER & TREATING CO.

"Wolman Salts"
A Universal Wood Preservative

GENERAL OFFICES
37 West Van Buren Street, CHICAGO, ILL.

BRANCH OFFICES
BOSTON, MASS. JACKSONVILLE, FLA. NEW YORK, N. Y. SAN FRANCISCO, CAL.
LOS ANGELES, CAL. ST. LOUIS, MO. EL PASO, TEX.

Products

GENUINE WOLMAN SALTS, the fluoride-phenol-chrome and the fluoride-phenol-chrome-arsenate Wood Preservatives.

They are clean, odorless, paintable, and somewhat fire-retardant. Higher toxicity than any salt preservative in commercial use. Non-corrosive to metals; no exudation; strongly fibre-fixed so that the protective effect is permanent.

WOLMANIZED LUMBER and TIMBER, any species of lumber, poles, posts, or other forest products treated under vacuum and pressure with Wolman Salts preservative and by the Wolman Process.

"Wolman Salts" and "Wolmanized Lumber" are registered trade-marks of the AMERICAN LUMBER & TREATING CO. *The above seal identifies forest products Wolmanized at plants owned and operated by* AMERICAN LUMBER & TREATING CO.

Wolmanizing—A Process of Impregnation

Wolmanizing is the application of the vacuum and pressure process of impregnation, using Genuine Wolman Salts as the preservative. When dried after impregnation, the wood is physically unchanged, but is effectively protected against decay and insects.

Wolmanized lumber and related products are distributed through established lumber sales channels from treating plants located at strategic points throughout the United States. Facilities for fabrication are available at most treating plants.

Wolman Salts are applied only by the full-cell process in closed retorts, insuring a deep and dependable penetration of the preservative to all treatable areas of the wood.

General Commercial Uses

Wolmanized Lumber is recommended for use wherever conditions invite attack by decay or termites. Typical examples of exposure are wood roof decks subject to high humidities, sub-flooring, platforms, bridge timbers, ties, posts and guard rails, wharf plank and timbers, car lumber, poles, lining of ice houses.

In residences, it is recommended that all lumber used in and below the first floor sub-floor be Wolmanized.

Wolmanized Lumber can be painted or stained. The cost of treatment is no more, and often less, than in the case of other treatments.

Because the sapwood of structural species is more durable when Wolmanized than is the heartwood when untreated, it is recommended that heart content be waived in specification. Sapwood and heartwood of structural species, when of the same density, are of equal strength.

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Service Records

A very thorough survey and inspection of the principal installations in the United States and in Central America, made by the *Pittsburgh Testing Laboratory,* provides the following conclusion from the detailed technical report on Wolmanized Wood:

"Wolman Salts, when properly used as a wood preservative treatment, will protect wood so treated by preventing or inhibiting decay.

This conclusion is based on the following:

(a) The reliably reported successful use of Wolman Salts in Europe.

(b) The fact that no traces of decay were found in the installations examined by us in the United States. These included installations up to eight years of age.

(c) The fact that decay of Wolmanized wood examined by us in the tropics has been almost negligible, installations up to nine years of age being examined.

(d) The finding of Wolman salts in the heart as well as outer sections of specimens of Wolmanized wood that had been in service for various lengths of time up to nine years.

Attack by Termites

Wolman Salts (Tanalith) when properly used as a wood preservative treatment will protect wood so treated by preventing or prohibiting the attack by termites. This conclusion is based on the following:

(a) The fact that no evidence of termite attack upon Wolmanized wood was found in the installations examined by us in the United States.

(b) The fact that we failed to find or learn of a single case of termite attack upon Wolmanized wood in the survey in Central America, of the Standard Fruit & Steamship Company's properties. This Company has used 35,000,000 feet of Wolmanized Lumber there during the last nine years.

(c) The finding of Wolman Salts by chemical analysis in all parts of specimens of Wolmanized wood taken after exposure to severe conditions in the tropics for various lengths of time up to nine years.

Respectfully submitted,
PITTSBURGH TESTING LABORATORY,
B. H. Witherspoon, President."

Specifications

(1) All lumber so specified shall be Wolmanized by treatment with Wolman Salts preservative by the vacuum-pressure, full cell process in accordance with the standard specifications of the AMERICAN LUMBER & TREATING CO., Chicago, with a net dry salt retention of $\frac{5}{10}$ lb. per cubic foot of the treated wood.

(2) Wolmanized Lumber to be used in contact with the ground shall be kiln-dried or air seasoned for a period of not less than 30 days after treatment.

(3) Wolmanized Lumber which is to be painted or varnished shall be kiln-dried or thoroughly air seasoned after treatment.

(4) Where it is found necessary to cut Wolmanized Lumber on the job, two coats of a concentrated solution of Wolman Salts preservative shall be brushed on the cut surfaces.

(5) Each piece of Wolmanized Lumber shall bear a brand certifying compliance with the requirements set forth in par. (1). A certificate of a recognized inspection service shall be available on request.

Write for our file-size, six-page folder containing complete specifications, recommended practice for residential use and detailed drawings showing approved methods of installation.

CELCURE SOUTHERN CORPORATION

Wood Preservation Engineers and Manufacturers

Graham Building, JACKSONVILLE, FLORIDA

ATLANTA, GA. BOSTON, MASS. CHICOPEE, MASS. COLUMBIA, S. C. MIAMI, FLA. NEW YORK, N. Y. PROVIDENCE, R. I. WORCESTER, MASS.
AND OTHER PRINCIPAL CITIES

Unfailing Protection Against Termites and Rot

Celcure

(Acid Cupric Chromate)

Maximum Effectiveness Minimum Cost

THE CLEAN, PERMANENT, CHEMICALLY REACTING WOOD PRESERVATIVE

What Is Celcure?

Celcure is a time-tested, positive protection for any kind of wood against the ravages of rot, termites, boring larvae, beetles and other insects, and teredo and other marine organisms. It is a mixture of chemicals in solution, not a creosote derivative, and contains no trace or compound of arsenic.

Recommendations

Most authorities recommend that at least all structural lumber up to and including the first subflooring should receive a preservative treatment before installation. In certain southern localities and tropical countries where dry-wood termites are prevalent, the low cost of Celcure Processed lumber often makes it economically sound to use treated lumber throughout the building.

Treatment

All Celcure processing plants are supervised by competent wood preserving engineers and complete records are kept on every charge. Celcure processing specifications demand a net retention of preservative chemicals which tests have repeatedly shown is positively effective. Every charge must meet these specifications, regardless of cost. Treating records are always available to the architect for inspection.

Application

Celcure Processed (impregnated) lumber does not damage paint or decorations, contaminate food, stain clothing, increase the fire hazard, stunt plant growth, cause unpleasant odors nor injure pets or farm animals. Service records prove that it may be used with absolute safety in the following classes of installations:

Railroad Ties
Telephone Poles
Greenhouses
Fencing
Refrigerating Compartments
Schools
Stadium Seats
Water Towers
Flumes
Mine Timbers
Farm Buildings
Gates and Fence Posts
Bridge Timbers and Decking
Dwellings
Furniture
Textile Mills
Station Roofs and Platforms
Ship and Yacht Building
Docks and Barges
Henhouses
Garden Seats
Porches
Laundries
Boardwalks
Preserve and Canning Factories
Packing Houses
Tourist Camps
Billboards
Mill and Mine Barracks

IMPORTANT PROPERTIES OF CELCURE

Why Celcure Never Fails

Because of the chemical reaction which takes place when Celcure comes into contact with the lignin-cellulose of which lumber is principally composed, the cellulose loses its food value, no longer attracts termites and will not sustain life in rot fungi. High toxicity is avoided and instead of poisoning enemies as they consume it, the wood by its changed chemical nature effectively and permanently averts their attacks.

Permanent (Non-leachable)

Celcure protection is permanent because it does not depend on a soluble poisonous deposit in the wood cells. Instead, Celcure definitely changes the composition of the cellulose and does not leach out or evaporate by action of sun or water.

Olive Drab Color

Celcure treatment imparts a permanent, pleasing olive drab color to lumber, the exact shade depending upon the kind of wood. This feature is heartily approved by architects and builders because it permits easy, quick identification of Celcure Processed lumber, whether it is stacked in the lumber yard or already in place in the building under construction.

Clean and Odorless

Unlike creosoted wood, Celcure Processed or surface treated lumber exudes no oils or chemicals and is completely odorless. Therefore it is highly suitable for interiors and exposed installations, such as stadium seats and boardwalks where the use of less desirable preservatives might cause serious damage claims. Celcure is neither sticky nor oily and does not stain clothing nor injure the skin of workmen handling the treated lumber. It is the ideal preservative for use in warehouses, trucks, railroad cars and steamships where odorous or unclean preservatives might contaminate food products.

Paintable

No properties of Celcure or Celcure Processed lumber when dry are antagonistic to paint, varnish, plaster or other decorative materials that might be applied over it. In fact, Celcure furnishes a perfect base coat for paint and will not burn or "bleed through." It positively prevents mold growth which, unchecked, will ruin a paint job on wood.

Non-poisonous

Celcure contains no trace or compound of arsenic, the highly leachable, extremely toxic ingredient upon which many treatments depend almost entirely for whatever preservative qualities they may have. Celcure in itself, having combined chemically with wood fibres so that it will not leach out and being of comparatively low toxicity, can under no circumstances contaminate meats, fruits, vegetables or other foods that may come in contact with the treated wood. This quality makes it unsurpassed for use in refrigerating compartments, packing plants, canning factories and similar installations.

Non-inflammable

The increased fire hazard when creosoted wood is used in buildings, wharves, trestles and many other installations has long been recognized by engineers and some insurance companies adjust their rates upward on such structures. Creosoted wood ignites easily and burns freely. Celcure, on the other hand, contains no creosote oils or other inflammable ingredients. On the contrary, Celcure-treated wood, because of its changed chemical nature, is definitely fire-retardant. It is more difficult to ignite and burns more slowly than untreated wood.

Weather Resisting

Celcure Processed lumber in boardwalks, stadiums and other exposed installations retains the smooth texture of new wood long after untreated lumber has weathered, splintered and roughened from the action of alternate sun and rain.

Non-corrosive

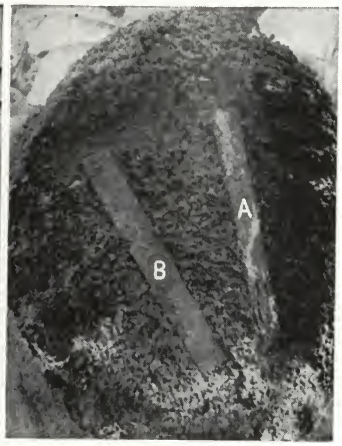
Nails do not "draw" in Celcure Processed lumber, nor does the preservative cause corrosion of bolts, screws, etc.

Wear Resisting

Laboratory tests and service records show that wood treated with Celcure has increased resistance to mechanical wear.

Economical

The use of Celcure Processed lumber or Celcure for surface application pays big dividends in reduced repair and maintenance costs. Moreover, the first cost of using Celcure is usually lower than that of other preservatives.



On the left is shown a tree in Puerto Rico and the huge termite nest in which test sticks were placed. On the right is a close-up of the nest broken open, showing the sticks after 2½ years' test. "A" is the untreated stick and "B" is the stick dipped in Celcure. "A" has been honeycombed by termites but "B" has not been touched—amazing proof of the ability of Celcure to withstand concentrated termite attacks.

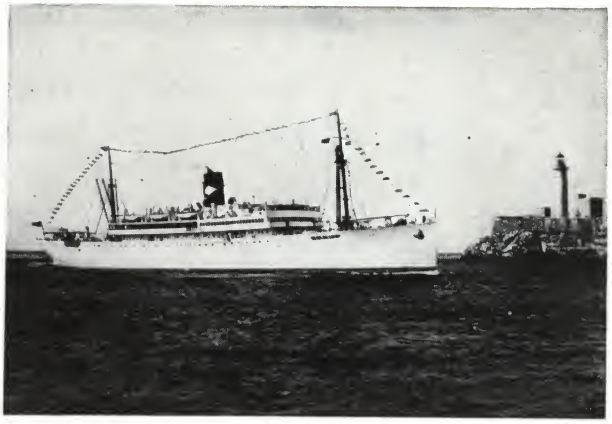
CELCURE PROCESSED (IMPREGNATED) LUMBER

Celcure Processed (impregnated) lumber, treated by *Vacuum Pressure* or by *Natural Vacuum* is supplied according to architects' specifications. This material has been demonstrated by Government and private laboratory and field tests and service records to be unexcelled for frame residence and industrial construction, as well as for boats, docks, bridges, etc. Its resistance to the attacks of rot, termites and marine borers is positive and permanent.

Specifications

The following lumber shall be Celcure Processed (impregnated) by Vacuum Pressure/Natural Vacuum *(delete method not applying)* at a plant operated or duly licensed by the CELCURE SOUTHERN CORPORATION of Jacksonville, Florida. All surfaces which are cut after treatment shall receive a drenching brush coat of full strength Celcure as furnished in the original package by the manufacturer. *(If Natural Vacuum method is specified, add):* The lumber shall be kiln dried or air seasoned to a maximum moisture content of 20% before treating.

The cost of Celcure Processing Sills, girders, first floor joists and subflooring in the average residence ranges between $3.00 and $6.00 per hundred square feet of first floor area, depending upon class of construction and location.



One of several fruit carriers built by Bethlehem Shipbuilding Corporation in which Celcure Processed (impregnated) lumber was used in all refrigerating holds. Celcure is the ideal preservative for such purposes because it does not "bleed" or contaminate food.

CELCURE FOR SURFACE APPLICATION

Because of its extraordinary affinity for the lignin-cellulose of wood, with which it combines chemically and permanently, Celcure provides surprisingly effective protection for lumber even when applied only to the surface by brushing, spraying or dipping.

This treatment is not recommended for underground installations or those in direct contact with the ground, nor is it suitable where mechanical wear or severe checking is likely to occur. *It is in no case recommended as equal to impregnation* but is remarkably effective under certain conditions and the cost is very small.

Specifications

The following lumber shall receive two drenching brush coats of full strength Celcure as supplied in the original package by the manufacturers. The first coat shall be so applied that all surfaces, including hidden surfaces and joints, shall be thoroughly treated. The second coat shall be applied after assembling and nailing, with special attention to any surfaces that are broken or cut after the first coat was applied.

Note: Efficient and thorough drenching by spray may be substituted for brush treatment. Somewhat better than good brush application is the immersion of lumber in air-temperature, full-strength Celcure on the job after pieces have been cut to fit. Do not heat Celcure solution.

REPORT AND ILLUSTRATIONS OF TEST CONDUCTED BY THE SCOTTISH MARINE BIOLOGICAL ASSOCIATION

After One Year

Note that the control (untreated) pieces of White, Red, Oregon and Pitch Pine have been seriously damaged by marine borers during one year's immersion in the sea. The four Celcure Processed blocks, however, are as sound as the day they were put in the water.

After Five Years

The untreated control pieces have been almost entirely eaten away by marine pests while the Celcure Processed blocks remain undamaged. This is conclusive proof that Celcure effectively resists attacks of grabble, stoneborer, shipworm or teredo, boring sponge and wood borer, which abound in waters near Millport where test was conducted.

CARBOLINEUM WOOD PRESERVING CO.

(INCORPORATED)

Manufacturers of Wood Preservative

Carbolineum Building, 528 West Highland Street

MILWAUKEE, WIS.

Product and Description

AVENARIUS REG. U.S. PAT. OFF. TRADE MARK CARBOLINEUM

Avenarius Carbolineum is a thin heavy oil, brown in color, ready for immediate use. It is manufactured in only one standard grade of uniform quality, therefore, future users can positively depend upon the same satisfactory results as achieved with it in the past.

Avenarius Carbolineum has established its reputation for highest quality and uniformity. Its preservative value is no theoretical conclusion, but is based on actual results. References can be supplied by us from nearly every locality in the United States.

Adds 100% to the life of wood—Always uniform in quality—Carbolineum preserves any wood against dry rot and premature decay.

Carbolineum was invented in 1876 by the late Richard Avenarius, who originated wood preservation by simple surface treatment.

Carbolineum registered in the United States Patent Office, No. 14048, is always sold with the inventor's name added, as: *Avenarius Carbolineum.* The arrow trademark makes identification easy.

Termite (White Ant) Protection

To drive out termites and to prevent their occurrence, it is necessary to apply a liberal coating of Avenarius Carbolineum about a foot wide to the footings of the building, as well as to all metal or concrete to form a complete barrier. Repeat this performance on the timbers on which the joists of the first floor rest.

A Long Lasting Stain—Rustic nut brown color
No Increase in Fire Risk—Contains no volatile ingredients

Where to Use

Half timber work, shingles and roof boards; fence posts, poles or props; scale platforms, block floors; screeds or sleepers embedded in concrete; ballast timbers for machine foundations; guards or bumpers of concrete platforms.

Upon request we will be glad to send a liquid sample of Avenarius Carbolineum or a sample of board which has been treated with it.

Comparison Chart

AVERAGE CREOSOTE OIL	AVENARIUS CARBOLINEUM
Variable Quality	Uniform Quality
Often mixtures of volatile oils, tar or pitch—water, gas, petroleum or wood tar distillates.	Anthracene oil and other ingredients constantly checked to maintain quality on which our service records are based.
Often high in acid content—injurious to wood fibre.	Free of injurious acids. Exclusive chlorination process increases decay-proof and antiseptic qualities.
Expensive treating equipment required to force impregnation by hot and cold bath treatment, or by vacuum or pressure cylinder process.	Negligible equipment cost. Application by brush, mop, spray or short time dip. Self-impregnating.
Usually leaches—bleeds—oozes.	Permanently fixed—no bleeding—no oozing—no leaching.

Approximate Cost of Material and Labor

About ¾¢ to 1¼¢ per sq. ft. surface treated.

COVERAGE, BRUSH AND SPRAY APPLICATION

Coverage sq. ft. per gal.	Brush one coat*	Spray one coat
Dressed lumber	200	150
Rough lumber	100	75
Shingle roof	100	75

*For second coat, one-quarter to one-third as much required.

Labor Requirements—*Brush*—One laborer can brush about 1,500 sq. ft. in 8 hours.

Spraying—With a spray gun about 5000 sq. ft. can be covered in same time.

COVERAGE, DIPPED—TWO MINUTES FOR EACH INCH OF MINIMUM THICKNESS OF LUMBER

Coverage per 1,000 ft. b.m.	Timber			Lumber			
Size, inches	12 x 12	6 x 12	3 x 12	2 x 10	2 x 8	2 x 6	2 x 4
Gallons required	3	5	8	12	13	14	15

Labor Requirements—For dipping 1000 board feet. Approximate average for above sizes—3½ hours of labor.

Specification and Application Methods

For Use on Wood

A wood preservative known as Avenarius Carbolineum, manufactured by the CARBOLINEUM WOOD PRESERVING CO., Milwaukee, Wis., shall be used on .....

It can be used in its natural state when the temperature is above 70° F., otherwise when quick penetration is desired or on damp or partly seasoned wood, it shall be heated to 150° to 220° F. or slightly above the boiling point of water.

Dipping—*Method One*—(When the treatment of a large amount of lumber comes in consideration, this method is the most economical.) After trimming timber or lumber, immerse it in Avenarius Carbolineum. 1-in. lumber to be submerged about two minutes. Add two minutes for each additional inch of lumber thickness.

Brush or Mop—*Method Two*—After lumber is trimmed or framed, apply Avenarius Carbolineum liberally with a wire bound or rubber set long handle brush or mop. Saturate well at all cross cuts, mortises, tenons and knotty spots. On old wood, where decay has already started, decayed parts should be removed before applying oil.

Spraying—*Method Three*——When a large amount of surface or wood in structure already erected is to be treated, the spraying method can be used best. Avenarius Carbolineum will work with any efficient spraying or paint machine.

CUPRINOL INC.

12 Norfolk Street, CAMBRIDGE, MASS.

CUPRINOL—A TIME TESTED PRESERVATIVE FOR WOOD AND FABRICS

The Product

CUPRINOL for Wood; CUPRINOL for Fabrics.
SUPER CUPRINOL; CUPRINOL for Fish Nets.

A Time Tested Preservative

Cuprinol has a background of over 25 years' successful protection of wood, fabrics, lines, ropes, etc. against the destructive attacks of fungi, bacterial growths, mildew, wet and dry rot and most insects. In several European countries, particularly in Denmark where it originated, it is extensively used by architects, government departments and others. In Asia, too, as well as this country, it has made a fine record in protecting the investment of the building and boat owner.

In famous old buildings in England it has been used to protect against further decay. The old timber in the roof of Eltham Palace, built in 1480, has been treated with Super Cuprinol to destroy the death watch beetle and protect the valuable structure from renewed attack. Balmoral Castle, Windsor Castle, Durham Cathedral, and buildings of Oxford University are among the historic places where Cuprinol has been used.

Cuprinol Gives Permanent Protection

Cuprinol is a solution of metallic salts which completely impregnate fabrics and sufficiently penetrate wood to provide lasting protection. Cuprinol penetrates the cellulose fibers with non-volatile metallic salts which will not dissolve in fresh or salt water; will not leach out or deteriorate with age.

Cuprinol is not poisonous to plant, fish, or animal life—it protects by preventing parasites from feeding upon the cellulose fibers from which they derive nourishment. It does not destroy the resiliency or ease of handling of wood—nor does it materially stiffen fabrics.

It contains no creosote and has no harmful effects on the skin when handling.

How Applied

Cuprinol is applied by brush, spray or immersion—no pressure treating is necessary. One treatment is sufficient.

Treating lumber before use is preferable, but treating may be done on the job, if desired, by ordinary labor. Wood fibers exposed by cutting, drilling, planing, etc., should be treated before the lumber is finally fastened in place.

Various Types Available

Cuprinol for Wood—Supplied in three types: *"Clear"* for use where wood is to be varnished or it is desired to retain the natural color of the wood; *"Green"* for use on lumber which is to be painted or which will be hidden from view; *"Brown U"* for exterior use as a stain as well as preservative.

Super Cuprinol—A colorless liquid, is a powerful fungicide and insecticide. Definitely destroys all wood destroying insects and their larvae and eggs from timber and prevents further attacks.

Cuprinol for Fabrics—Supplied in two types—Regular and Waterproof. Both are equally efficient in preventing mildew; the latter waterproofs as well as protects.

Cuprinol for Nets—Used particularly for fish nets, mooring lines, etc., where it is desired to prevent marine growths, rot and insect attacks.

Where to Use Cuprinol

For Wood—All wood in dwellings and industrial buildings, camps, wharves, floats, greenhouses, boathouses, boats, fences, farm buildings, storage cellars, breweries, mines, refrigerator cars. Particularly recommended is the treatment of such vital spots as sills, doors, window frames, porch floors, steps, around eaves, gutters, or wherever there is contact with the ground. Also for back painting interior trim.

For Fabrics—Awnings, tarpaulins, sails, boat covers, canvas furniture, life preservers, side curtains, shade cloth, rope, tents, tennis nets, fire hose (if not rubber), or any textile fabric subject to mildew and rot.

For Nets—Ropes, lines and nets subject to periodic or continuous immersion in water.

Coverage

In brush or spray treating, 1 gal. of Cuprinol for Wood will cover approximately 250 to 600 sq. ft. of surface depending on type of wood and whether surface is rough or smooth.

Coverage for Super Cuprinol depends on density of infestation. Average coverage, 300 sq. ft. per gal.

1 gal. of Cuprinol for Fabrics will protect about 40 sq. yds. (20 lbs.) of 8-oz. duck or canvas, or about 30 lbs. of rope. Other weight fabrics in proportion.

Cost

Approximately 1c per surface square foot.

Specifications for Use of Cuprinol in Buildings

All lumber including rough lumber and interior and exterior finish and all flooring, both rough and finished, used in the construction of the building shall be given a brush or spray coating of Cuprinol for Wood. Clear Cuprinol shall be used on lumber which is to be varnished or stained—Green Cuprinol shall be used on all the balance.

Wood used below surface of the ground (such as fence posts, or sills, which come in contact with the earth) shall be given two coats of Green Cuprinol, the second to be applied about three hours after the first.

Where wood is cut, sawed or bored after treatment, all exposed untreated surfaces shall be coated before being set in place. Allow seven days drying time between application of Cuprinol and balance of paint.

On wood surfaces to be sanded before painting, apply the coat of Cuprinol after sanding has been completed.

Note: Cuprinol saves cost of priming coat of paint. In writing paint specifications, eliminate the usual priming coat on all Cuprinol treated lumber.

How Obtainable

Cuprinol is available through building supply dealers, paint stores, ship chandlers and marine yards, in pint, quart, gallon and 5-gal. cans or 50-gal. drums. Many lumber dealers are equipped to treat lumber before delivering to the job, and more dealers are installing treating equipment to supply treated lumber. Write for further details and name of nearest dealer.

Fabrics may be treated before or after making up, by the individual or through a dealer.

MEMORANDA

Facts ABOUT FIREPROOFED WOOD

PROTEXOL CORPORATION

Assembly Chamber in the New York State Capitol, Albany. Fireproofed fir, spruce and pine were used in the coffers of the ceiling to provide support for tile. W. E. Haugaard, Commissioner of Architecture.

Fireproofed wood shingles used on the Scott Cottage of Col. H. H. Rogers residence at Southampton, L. I. Holland & White, Architects, New York City.

Fireproofed knotty pine used in the Directors Room of the New York Hospital, New York City. Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass., Architects.

Fireproofed Wood in

PROTEXOL FIREPROOFING OFFERS ARCHITECT, DESIGNER AND

The requirements of structural materials for flexibility as well as acoustical and insulating qualities are best met by wood. The added feature of great strength for a light weight recommends wood for many structural uses. Fireproofed wood enhances these qualities and gives internal protection against spread of fire that is not dependent upon human control or mechanical devices. When fireproofed wood is built into a structure it insures permanent fire protection which has now been recognized by the highest authorities — the Underwriters Laboratories of Chicago, in their report R2282, have approved Protexol's product for label service as being permanently non-combustible; it has been approved also by the International Association of Fire Chiefs.

FIREPROOFED WOOD IN HOTELS, APARTMENTS, OFFICE BUILDINGS, ETC.

The experience of New York City, which has required fireproofed wood for interior trim in its building code since 1899 following the Windsor Hotel fire, offers ample testimony to its offering internal fire protection. Protexol's Process is a development of the Bachert Process in commercial use since 1895.

FIREPROOFED SCAFFOLDING

The fact that fire insurance companies offer a reduced rate of 20% for the use of Protexol's grademarked fireproofed scaffolding amply demonstrates its economic value. Its requirement by the New York World's Fair proves it to be a form of use and occupancy insurance.

FIREPROOFED WOOD IN THE PLANT AND FACTORY

Exposed to acid fumes as in the roof of pickling or sulphur bleach rooms, fireproofed wood has merited as low a rate of fire insurance as the installation of sprinklers with every assurance of a longer life than from steel construction. Corroding fumes frequently make the use of wood roofs advisable, and fireproofing insures the necessary fire protection. In other cases of roof construction acoustical and heat insulating values make the use of wood roof planking advisable. Spark hazards are omnipresent in alcohol or light oil plants and fireproofed wood walks, stairs, etc., give assurance of protection. Structural uses for fireproofed wood are limitless.

Washington Irving High School, New York City. New wing in which fireproofed maple flooring and pine lining was used.

• the Building Field

GREAT POSSIBILITIES TO THE CONSTRUCTION ENGINEER

FIREPROOFED WOOD AS AN ELECTRIC INSULATION

The fact that the three largest power companies use fireproofed wood for buss cell compartment doors amply attests its usefulness for that purpose. On the S. S. "Queen Mary" fireproofed wood conduits are used exclusively.

FIREPROOFED WOOD DOORS

Bearing in mind that wood doors are hung with smaller clearances than metal doors will best indicate why they are better smoke barriers. Where a life hazard exists, fireproofed wood doors offer the greatest protection. This is as important for entrance doors in hotels or apartments as it is for basement entrances in dwellings where 25% of the fires start.

Fires have been stopped by doors of fireproofed wood in guest rooms of the Hotel Pennsylvania, The New Yorker, Ritz-Carlton, Commodore, St. Regis and the Dixie Hotel and also a number of apartment houses. Their value has been established by the test of actual fires.

On July 23, 1935, the world's highest fire occurred on the 48th and 49th floors of the General Electric Building in New York City. Details of this fire, in which hollow metal doors failed, appeared in the Hardwood Record of June, 1936. The New York Board of Fire Underwriters report in survey S.B. No. 377: "The chemically-treated wood doors were not charred beyond the depth of the finish veneer. They were not warped and prevented the fire from entering the rooms through the openings where the doors were installed. After the fire they were found to operate freely." See picture at right.

FIREPROOFED WOOD IN SHIPS

Comfort and luxury demand the liberal use of wood for ship interiors. During the Spanish American War fireproofed wood demonstrated its value during battle conditions. The mining of H. M. S. Hunter, a British Destroyer, during August, 1937, off the Spanish Coast, also gave evidence on the value of fireproofed wood. The report states:—

"The present practice of using fireproofed wood wherever possible received ample justification. Though quantities of oil fuel were thrown about by the explosion, and small fires occurred, in no instance was difficulty experienced in quenching them. Fireproofed wood was found with the paint badly scorched, and but for the fireproofing, serious fires might have occurred."

Fireproofed wood was used extensively on the U. S. Liners Manhattan and Washington.

Wood Assures Comfort

Seversky Aircraft Corporation, Farmingdale, N. Y. Receiving and Shipping Building, John H. French Co., New York City, Engineers and Contractors. Roof plank of fireproofed wood.

Fireproofed wood used for ceiling timbers in plat ing room of The C. O. Jelliff Mfg. Corp., Southport Conn. Approved by fire underwriters.

RECOMMENDATION

TO THE FIRE COUNCIL OF UNDERWRITERS' LABORATORIES:

We recommend promulgation of the following notice to subscribers and the action indicated thereby:

Guide No. 540 IO — December 15, 1935—Laboratories' File R2282

Protexol Corporation,
Kenilworth, N. J.
Fireproofed Wood

Red oak and maple lumber for flooring or interior finish chemically impregnated so as to be practically nonflammable and noncombustible.

Listed — Label Service.

See description of Label Service on guide card.

Authorities having jurisdiction should be consulted before installation.

Tests by: J. B. Finnegan, A. J. Steiner, C. A. Tibbals, M. Melnick

Report by: A. J. Steiner, Assistant Engineer, Protection Department

Reviewed by: Protection Engineer

The foregoing Recommendation has been accepted.

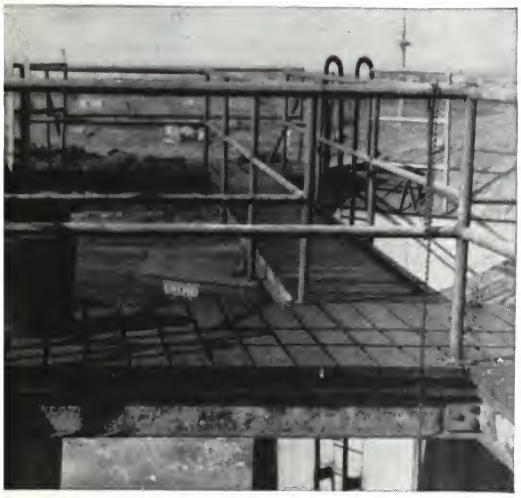
UNDERWRITERS' LABORATORIES

Secretary

Fireproofed wood doors from elevator corridor 49th Floor, General Electric Building, New York Cit after fire July 23, 1935. Pruitt & Brown, Architec

Above: Conveyor bridge with fireproofed wood decking at the plant of The Proctor & Gamble Company, Port Ivory, Staten Island. H. K. Ferguson Company of New York City, Engineers and Contractors.

Left: Mezzanine floor of fireproofed wood in the Long Island City warehouse of the Crane Company. Gabler-Lang Co., Inc. Engineers and Builders. Approved by fire underwriters.



Left: Catwalks and runways of fireproofed wood adjacent to tanks in the alcohol plant of the Publicker Commercial Alcohol Co., Philadelphia, Pa.

Below: Footbridge with fireproofed decking on Pier 25, North River, of Eastern Steamship Lines Inc., New York City. Robbins-Ripley Co. Engineers.

WHAT FIREPROOFED WOOD IS

Fireproofed wood is chemically impregnated wood rendered permanently incapable of supporting combustion. When heat is applied to fireproofed wood, it begins to decompose the injected chemicals into non-poisonous gases which are not only non-combustible but which serve to prevent the oxygen of the air from gaining access to the wood which is being heated. Hence combustion is inhibited. As the application of heat continues a series of endothermic reactions takes place. Checking, charring and slow destruction continue without contributing any fuel value, i.e., no increment in temperature occurs. The surface of the wood manifests only a slight glow, and that portion of the wood bordering on the surface, that is directly exposed to the flame, depending upon its intensity, likewise checks and chars. The gradual disintegration of the wood results by virtue of dry distillation without bursting into flame or spreading blaze. The wood is reduced to a clinker-like charred condition and not to an ordinary ash. Effective fireproofing compounds increase the yield of charcoal by slow dehydration of the wood substances. The principal effects of fireproofing treatments are to retard the normal increase in temperatures under fire conditions, to decrease the rate of flame spread and ignition of the wood, to lessen the rate of flame penetration or destruction of wood in contact with fire, and to extinguish fires more easily.

HOW WOOD IS FIREPROOFED

The process of impregnation is essentially the same as that followed in other systems of wood preservation. The wood is treated in a sealed cylinder in which the chemical solution is forced into the wood under pressure. In general, this is done in accordance with the standardized procedure of the American Wood Preservers Association Specification 35c and 38a.

WHAT WOODS CAN BE PROCESSED

While some species of wood offer more resistance to impregnation than others, no difficulty has been experienced in satisfactorily treating dense woods such as walnut, maple and white oak. The color and appearance of the wood is not altered.

MEASURING FIRE RESISTANCE

The yardstick for fireproofed wood is one of performance in assembly or laboratory tests. The tests required by the American Society for Testing Materials in Specification C 19-33 and C 132-37 T as well as the tests required by the New York Building Department clearly indicate the fitness of the material to pass as fireproofed. Impregnation treatments may be complete saturations as in the case of interior trim or only partial as in the case of structural timber which can be framed to its ultimate dimensions before treatment.

FIREPROOFING IS LASTING

The permanency of the fireproofing is vouched for by no less an authority than the Underwriters Laboratories of Chicago, who, after exhaustive tests over a period of years, approved Protexol's fireproofed wood in their Report R2282. The fire record of New York City's high buildings since 1899 amply attests the permanence of the fireproofing. Details on request.

THE CHEMICALS ARE NOT CORROSIVE

The question of corrosivenes of the chemicals was covered by the report of the Underwriters Laboratories. The U. S. Forest Products Laboratory reported on metal fastenings in fireproofed wood removed from the Belmont Hotel, New York, when this was dismantled after a service of 26 years. "The brass screws and hinges were only slightly tarnished and the iron nails for holding in the molding were mostly bright with only a few small spotty rust places on them; no portion of these metal fastenings showed any excessive corrosion."

FUMES ARE NOT POISONOUS

The products of combustion (fumes) were sampled and tested by the Underwriters Laboratories who reported that "the treated material under fire attack emits no injurious fumes traceable to the chemicals with which the wood is impregnated."

THE FIREPROOFING CHEMICALS ARE STAPLE

In the 1938 Proceedings of the American Wood Preservers Association, on page 323, is reproduced a summary of tests on the fire resistance of ten different treatments carried out by the California Division of Highways at Sacramento, Cal. The report states: "It may be concluded that the Protexol Process has substantial resistance against leaching."

HISTORY

Historically, fireproofing of wood began in the fourth century B. C. when Aeneas recommended the use of vinegar. In the files of the British Patent Office the earliest record of a patent appears in 1625. More than 700 patents have been issued in 34 countries. The first commercially successful patent was issued to Max Bachert in 1893. Upon securing the rights to this process the Protexol laboratory improved it until it passed the Underwriters' Laboratories requirements.

●

Fireproofed pine was used in this revolving platform in the Dodge-Chrysler Showroom, Chrysler Building, New York, N. Y.

Fireproofed framing was used for the Old South Tower, an old landmark in Copley Square, Boston, Mass. Allen, Collens & Willis, Architects. Turner Construction Co., Builders.

Fireproofed Wood is Non-Combustible

Oliver Cromwell Hotel, West 72nd St., New York City. Emery Roth, Arch. Fireproofed flooring and trim throughout.

Board of Directors Room, Seagram Distillers Corporation, Chrysler Building, New York City. All wood fireproofed. Morris Lapidus, Architect.

Executive office of B. Altman & Co. in the Empire State Building, All paneling fireproofed wood.

Wood Gives Distinction

COST OF FIREPROOFING

In a general way, it may be estimated that the cost of fireproofing wood is about equal to that of the lumber in its untreated state.

In the itemized list of expenditures on a school building costing $315,000, the percentage of increased cost due to the use of fireproofed wood as against untreated wood was 2.5%, while in the case of two large apartment houses the percentages of increased costs were 2.39 and 2.83% respectively. For a two-story frame house with nine rooms, having a total floor space of about 1,900 square feet, the cost of fireproofing the framing timbers, flooring, interior trim and doors amounted to $485.00. For a six room stucco-finished house, 28 by 36 feet, the cost for fireproofing the framing and sheathing, flooring, sub-flooring, window frame and sash, interior trim and doors amounted to $391.75. For a frame house in Washington, D. C., the cost of fireproofing the wood was 33 cents per cubic foot.

In the case of a powder house, having an estimated value of $3,600.00, the charge for fireproofing the wood was $540.00, or about 15% of the cost of the building. The building, its equipment and accessories were valued at $19,600.00; thus, the percentage of increase in cost due to the use of fireproofed wood was only 2.75%.

To secure protection against flying brands and sparks an aircraft corporation used fireproofed roof planking on its Receiving and Shipping Building at an additional cost of 6c per square foot of wood surface or about 2% of the cost of the building.

A power company wishing to protect a line of 886 poles against grass fires by sheathing the bases of the poles six feet high with one inch strips of fireproofed wood estimated the cost for this work at $2,000; this was calculated to give the poles protection against fire for a minimum of five years. The cost to clear the grass away from the base of each pole twice a year during the dry grass season was estimated at around $1,200 per annum.

On a low-cost type of structure, as, for example, scaffolding, the initial cost of fireproofing may be 50% of the lumber cost, but in this particular instance, the lumber has a salvage value, for it can be used over and over again and in each case it will save the contractor materially (usually 20%) in the cost of fire insurance.

Nurses Home, Hartford Retreat, Hartford, Conn. Fireproofed furring strips used throughout. A. F. Peaslee, Inc., Hartford, Conn., Builders.

Fireproofed pine lobby at the Einhorn Memorial Building, Lenox Hill Hospital, New York. Insures sound absorption. York & Sawyer, Architects.

According to reliable British sources the use of fireproofed wood on warships increased the cost by only .1%, while on a modern passenger ship, the cost is increased by only 1%. This added expense is in part compensated for by the reduced insurance rates.

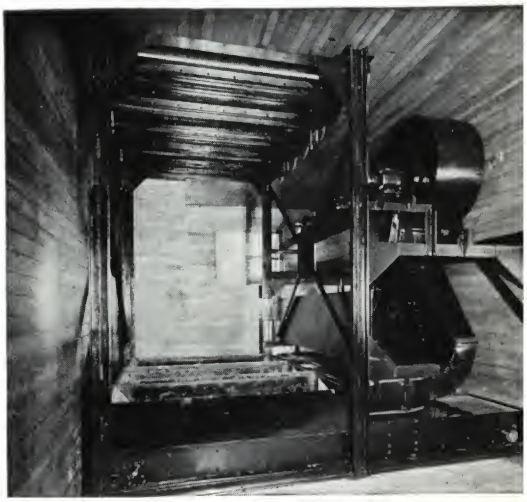
SMOKE TIGHTNESS AND HEAT TRANSMISSION OF DOORS

(Extracted from Hearings on Safety at Sea before U. S. Senate Commerce Committee, May 19, 1937)

Standard fire tests on 1¾" doors. Measurements for decreased visibility or smoke density taken at a five-foot level two feet from the door in an eight-foot ventilated vestibule equipped with photo-electric means. Vestibule temperature taken at same height above floor, one foot in front of door under test.

	Time in Min.	Wood Fire-proofed	Asbestos Protected Wood	Kala-mein	Asbes-to Steel	Hollow Metal
Decreased Visibility in Per-centage	5		92	11	21	52
	10	10	100	39	42	90
	15	16	100	89	67	90
	20	8	100	89	92	62
	25	10	100	89	94	43
	30	8	100	89	96	39
	35	21	98	94	100	28
	40	16	94	94	92	59
	45	16	68	94		62
	50	16	47	94		62
	55	16		100		14
	60	10		100		14
Transmitted Temperature Degrees F.	5	82	68	184	153	161
	10	83	70	192	265	397
	15	88	77	222	435	590
	20	92	83	327	663	700
	25	98	96	460	805	722
	30	115	109	610	902	818
	35	128	124	702	970	884
	40	143	141	753	1,005	938
	45	162	177	793	1,048	1,005
	50	180	187	802	1,050	1,058
	55	201	199	810	1,062	1,079
	60	210	213	798	1,080	1,095
Vestibule Temperature Degrees F.	5	80	Not Deter-mined	82	83	82
	15	80		84	104	97
	30	84		104	172	126
	45	90		144	212	201
	60	108		174	241	269
Air Temperature		80	72	76	83	52

The significance of this temperature record is evident when it is realized that at a temperature well under 500° F. almost all flammable materials catch fire spontaneously and that at a temperature well under 250° F. human life cannot exist.



Wool Processing unit at the Pacific Mills, Lawrence, Mass. of the Frosted Wool Process Co. Fireproofed fir sheathing on the walls and ceiling. Approved by fire underwriters.

Fireproofed plank walks in pipe spaces of the United Shoe Machinery Company Building, Boston, Mass. Geo. A. Fuller Co., Builders.

Blockhouse on the Saratoga Battlefield at Saratoga, N. Y. Protexol treated. Photo by courtesy of Director W. G. Howard, Land and Forests, Conservation Department, Albany, N. Y.

Fireproofed wood used for this Motor Drome on the Coney Island Boardwalk.

Above: Norse Grill, Waldorf Astoria Hotel, New York. Flooring, panelling and beamed ceiling of fireproofed wood. Schultze & Weaver, Architects.

Above: Fireproofed wood was used for the stage of the Manhattan Theatre, C.B.S. No. 3, New York, on which Major Bowes conducts his Amateur Hour.

Left: Front view from Harvard Yard, Fogg Art Museum, Harvard University, Cambridge, Mass. Fireproofed wood used for lining.

SELECTING THE PROPER TREATMENT

This calls for a careful consideration of all the factors pertaining to decay, fire hazards and use. Toxic chemicals are employed in all of the Protexol treatments. The chemicals employed in the solutions that are forced into the tissues of the wood remain firmly fixed.

Class A is the so-called Non-combustible or Complete Impregnation treatment (heart and sapwood), which is designed to protect wood against ignition and spread of flame in locations where the greatest fire hazards exist. It meets the requirements of the Underwriters' Laboratories, U. S. Government and New York City Building Department. It increases the weight of one inch lumber between five and six pounds per cubic foot.

Class B, or trade-marked "Pyresote" treatment is designed primarily for structural timbers used in places in which protection against fire, decay and insects is important. This calls for a less intensive impregnation of solutions that combine resistance to decay, insects and ignition. It is the most comprehensive treatment thus far devised and meets the fire resistance requirements of specification C-132-37-T, A. S. T. M. The increased weight based on one inch lumber is approximately three pounds per cubic foot of wood.

Class C, or Slow-Burning Treatment, is recommended for structural timbers for interior use. The penetration of the solutions is as deep as in the Class B treatment. This treatment is recommended especially for wood used for stage construction as well as for roof planking and trusses. For the best results the timbers should be framed and ready for joining in advance of the treatment. It meets American Society for Testing Materials specification C-132-37 T. Weight of the wood per cubic foot is increased from three to four pounds in the case of one inch lumber.

Class D, or Non-Flammable treatment, is a less intensive impregnation designed primarily for shoring, scaffolding and other temporary construction, or for conditions which do not offer great fire hazards. This treatment meets the New York, Philadelphia and Washington Underwriters requirements as well as the A. S. T. M. Specifications C 132-37 T. It adds approximately two pounds per cubic foot of wood to the weight.

Fireproofing is a technical process involving a consideration of the proper amount of chemicals that will remain balanced in a water solution within definite temperature limits and react chemically to form insoluble compounds, when the water is removed from the wood by evaporation. Vacuum and pressure periods must be carried out to secure proper distribution of the chemical solution within the structure of the wood without causing a rupture of the wood or a degrading of the lumber.

Fireproofed Wood has proven its merit.

SUGGESTED SPECIFICATIONS

FIREPROOFING FOR INTERIOR TRIM, FLOORING AND FRAMING—CLASS A

All wood for interior trim, doors and flooring shall receive a vacuum pressure fireproofing treatment which will satisfactorily meet the test requirements of the Underwriters Laboratories, Chicago, Ill. or the rules for Inspecting Fireproofed Wood used by the Engineering Laboratory of Columbia University, New York City.

All grounds or nailers not covered on three sides by non-combustible material shall be similarly fireproofed.

It is the intent of these specifications to require a treatment that will insure permanency of the fire retardant chemicals equal to the Class A treatment of the Protexol Corporation, Kenilworth, N. J.

Above: Ferryboat "Meadville." Fireproofed black gum decking used. Mr. A. G. Trumbull, Ch. Mechanical Engineer, Erie Railroad Co., Mr. J. W. Millard, Consulting Naval Architect and Hermann von Schrenk, Consulting Timber Engineer.

PRESERVATIVE TREATMENT AGAINST DECAY AND FIRE—CLASS B

The wood after working or framing to its final dimensions, shall receive a vacuum pressure treatment with toxic chemicals equal to the requirements of specifications 35c for yellow pine, or 38a for fir, of the American Wood Preservers Association, which, in addition, shall contain fireproofing chemicals that will insure the chemically treated wood meeting the fire test requirements of Specification C 132-37T of the American Society for Testing Materials.

It is the intent of these specifications to require a treatment that will insure the permanency of both toxic and fire retardant chemicals equal to the Class B treatment of the Protexol Corporation, Kenilworth, N. J.

Above: Fireproofed wood was used on New York City ferryboats "Gold Star Mother," "Mary Murray" and "Miss New York" by the United Shipyards of Staten Island, N. Y. Above the "Gold Star Mother."

FIREPROOFING FOR STRUCTURAL TIMBER—CLASS C

The wood after framing or working to its final dimensions shall receive a vacuum pressure fireproofing treatment which will satisfactorily meet the fire test requirements of Specification C 132-37T of the American Society for Testing Materials.

It is the intent of these specifications to require a treatment which will insure permanency of the fire retardant chemicals equal to the Class C treatment of the Protexol Corporation, Kenilworth, N. J.

Above: Fireproofed wood was used for the panels and doors on the tankers "Mobiloil" and "Mobilgas" of the Socony-Vacuum Oil Co.

FIREPROOFING FOR SCAFFOLDING, SHORING OR OTHER TEMPORARY CONSTRUCTION—CLASS D

All lumber after being worked or framed to its final dimensions, shall receive a vacuum pressure fireproofing treatment which will insure the lumber meeting the fire test requirements of Specifications C 132-37T of the American Society for Testing Materials.

It is the intent of these specifications to require a treatment that will insure permanency of the fire retardant chemicals equal to the Class D treatment of the Protexol Corporation, Kenilworth, N. J.

FIREPROOFED WOOD DOORS

Flush doors of 1¾ inch thickness with face veneers of (species of wood) shall be of fireproofed wood capable of meeting the one hour standard assembly fire test as required by Specification C 19-33 of the American Society for Testing Materials.

Wood Absorbs Noise

Right: Stateroom on the United States Liner "Washington" showing fireproofed wood panelling and door used throughout this liner as also on the "Manhattan."

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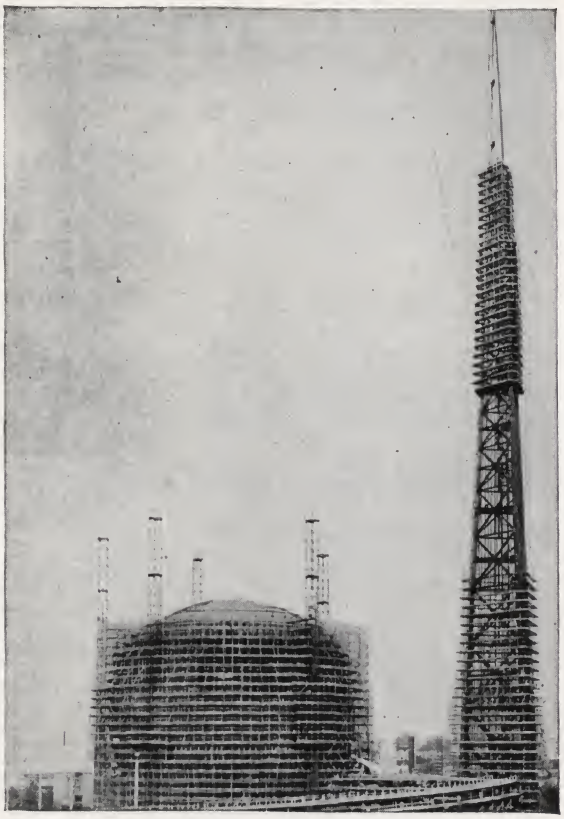
THE WORLD OF TOMORROW

An important factor in the construction of the New York World's Fair makes fireproofed wood the building material of tomorrow. In the construction of "The Theme Center," the Perisphere and Trylon, fireproofed wood is being used extensively, while all the scaffold planking surrounding these structures is likewise fireproofed. In the case of other buildings at the World's Fair, the Board of Design has made it mandatory to use fireproofed wood for interior scaffolding and fireproofed wood or other non-combustible material for the structural parts of such buildings. On the other hand it has left it optional to use fireproofed wood or other non-combustible material for interior work, unless an approved sprinkler system is installed. These specifications have the support of the fire department and also of fire insurance companies, which grant compensating rates on insurance.



Above: The Theme Center at the World's Fair showing the connecting structure and Helicline. Fireproofed wood throughout.

Below, left: Washington Monument, Washington, D. C. during the repairs made in 1934. Fireproofed scaffold planking used upon specification by the National Park Service, U. S. Department of the Interior.

Fireproofed scaffold planking was used extensively on the Pennsylvania Railroad Station, the Franklin Memorial in Philadelphia and the National Art Gallery, Washington, D. C., where Fire Underwriters give a reduced rate. Similar credits are offered by New York Fire Underwriters since 1929. The use of fireproofed wood was adopted by the National Fire Protection Association in its Recommended Good Practice Requirements for Building Construction Operations in 1933.

Strength tests on fireproofed scaffold planking were conducted by the Columbia University Engineering Testing Laboratory in 1930 and indicated that it is entirely practicable to secure adequate fire protection without appreciably affecting strength.

Left: Fireproofed lumber was used for this television tower of the Philco Co. in Philadelphia, Pa., on the recommendation of the Philadelphia Building Department.

Right: Fireproofed scaffold planks surrounding the square block of B. Altman & Co., Fifth Ave. and 34th St., New York City. Chesebro Whitman Co. Scaffold Contractors.

DRYING

After the wood has been treated with the fireproofing solution it must be dried to a condition suitable for use. If it is to be used for structural purposes, air drying will be quite satisfactory, but, if it is required for interior woodwork or trim, it must be kiln dried.

MACHINING, GLUING AND FINISHING

For machining fireproofed wood the use of tungsten carbide or alloy tools is recommended, and for the best results the wood should be moved through the machines at high speed. Both hide and casein glues have proven very satisfactory on fireproofed wood. It has been claimed that the new cold mixed resinous glues and the phenolic resin glues employed in the hot press processes are giving still better results. Finishing fireproofed wood presents no great difficulties; the fire resisting chemicals forced into the tissues of the wood serve as a filler. Shellac acts as a sealer and should be used whenever oil paints are to be applied. Water stains should not be used. Varnish, lacquer or wax may be applied to treated wood in a manner similar to that of untreated wood. Any of the treated woods can be finished in their natural shades of colors.

TREATMENTS AGAINST DECAY AND TERMITES

Zinc chloride treatment (Burnettizing) is a vacuum-pressure process of impregnating wood with a solution containing from one-half to one pound of dry salt per cubic foot of wood. This is a standardized treatment of the American Wood Preservers Association, American Railway Engineering Association and master specification of the Federal Specification Board.

Chromated zinc chloride treatment is in all essential respects similar to the preceding one, but it calls for three-fourths of a pound of dry salt per cubic foot of wood. It is claimed by its proponents to be more toxic and less soluble than zinc chloride.

Pyresote, known as the Protexol Class B treatment, is applied under pressure as in the preceding, but there are added to the solution certain decay and fire-retardant chemicals (Zinc chloride, Bichromate and Ammonium Salts) which insure a net retention of two pounds of dry salt per cubic foot of wood in tie timber. The salts are less soluble and less corrosive than any other preservative salt combination.

Fluor-phenol (Trade-marked Protexide) treatment calls for a combination of sodium fluoride and dinitrophenol with an anti-corrosive chemical, usually bi-chromate or borax, and sodium arsenate is sometimes added. These combinations are frequently called Wolman salts, though originated by Malenkovic. Those sponsoring these treatments recommend a net retention of from one-fourth to three-tenths pound of dry salt per cubic foot of wood.

Above: Doors fireproofed for compartments for oil switches in power house of the Public Service Electric & Gas Company, Newark, N. J.

Above: Board Room, Starrett Corporation, 26th floor, Empire State Building, Shreve, Lamb & Harmon, Architects. Fireproofed wood throughout.

Left: Protexol treated lumber was used for this Cupola Bell for the U. S. Post Office, Poughkeepsie, N. Y. Eric Kebbon, Architect.

Right: Fireproofed wood platform for the storage of models, samples and templates used by the Inspection Department of the City Auto Stamping Co., Toledo, Ohio.

SERVICES...

Complete chemical and engineering laboratories. Full size gas fired furnace for testing door assemblies, sash or partitions to A.S.A. and A.S.T.M. standards available for private or official tests.

Treatments Are Certified

Certified statements as to the treatments applied to wood as well as the tests made at the Protexol Laboratory will be supplied upon request. Inspection of both treatments and tests by purchasers is respectfully invited.

The continuous and never ending protection is represented by the cross section of a log. In practice the circle is used as the face of a clock and a line is branded across the circle to show the month during which the treatment was given. Thus, three o'clock indicates that the treatment was given during March. This makes it convenient at all times to check back to the retort record chart covering the particular treatment.

PROTEXOL CORPORATION

WOOD PRESERVERS SINCE 1887

37 MARKET ST., KENILWORTH, N. J.

New York Sales Office—Room 2717, Grand Central Terminal

Telephone MURRAY HILL 9-6928

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FIFTEEN PLANTS TO SERVE YOU

For Reilly Built-up Roofing and Waterproofing, see File Index

THE MODERN, SCIENTIFIC ANSWER TO THE PROBLEM OF THE PRESERVATION OF WOOD AGAINST DECAY AND INSECT ATTACK

Reilly *Transote* is a highly refined, scientifically blended, transparent coal tar creosote, especially developed to provide a colorless treatment for the preservation of wood against decay and insect attack. When properly applied by an experienced operator *Transote* not only eradicates termites from infested timbers, but also gives positive protection against further infestation. Rigid tests, made by independent scientists under conditions more severe than any encountered in actual service, prove that *Transote* preserves lumber of all kinds against decay and wood-eating insects.

TRANSOTED LUMBER CAN BE PAINTED OR FINISHED IN ANY MANNER

Lumber treated with Reilly *Transote* is not oily, and is unchanged in color. It can be painted, varnished, stained, glued or finished in any desired manner with the same ease and dependability as untreated wood. The preservative treatment also acts to a degree as a filler, and as a result less paint is required to cover a given surface. As *Transote* contains no water, it can be used to treat seasoned lumber without affecting its moisture content. It can also be used on glued stock without affecting the strength of the joints. Thus it can be applied to complete window frames, sashes, doors, etc.

This was a shingled wall. Termites attacked under the shingles and destroyed the sheathing. The outside appeared perfectly sound. Reilly TRANSOTE prevents such damage

SAFE AND ECONOMICAL TO USE

Lumber treated with Reilly *Transote* is non-poisonous to humans and liberates no toxic fumes. There is, therefore, no health hazard to workmen handling lumber treated with *Transote,* nor to occupants of buildings that have been constructed with lumber so treated.

The cost of the protection which Reilly *Transote* gives is insignificant in comparison with the damage which may result from termite infestation or decay. The use of lumber treated with Reilly *Transote* is economical because it obviates future expensive replacements and insures permanence of the construction.

ALL VITAL SPOTS SHOULD BE PROTECTED

Regardless of the type of construction, all parts in every building, such as sills, joists, sub-flooring, studding, roof timbers, stringers and uprights should be protected with Reilly *Transote.* Also the door frames, window sash, porches, steps, and all woodwork in close proximity to the ground should be treated, since they offer means of entrance to termites unless properly protected with *Transote.*

A close-up of termite's work. Paper thin walls separate the channels and cover the other side of this board

EASILY APPLIED TO MEET ALL CONDITIONS

Reilly engineers have designed a simple and efficient method of applying *Transote* which meets every possible condition. The ease with which lumber can be treated and the rapidity with which *Transote* penetrates deeply into the wood insure quick and thorough results. For certain woods, such as birch, hemlock, fir and white oak, because of their refractory nature, application under pressure is recommended. Other woods, such as southern yellow pine, ponderosa pine, sugar pine, cypress, sap cedar, red oak, sap redwood, ash, hickory, chestnut, maple, gums and cherry can be successfully treated by immersion. Specific information on methods of treatment will be mailed on request.

AVAILABILITY

Reilly *Transote* is available in 1, 5 and 55-gal. containers—also in tank cars. It may be obtained from progressive dealers everywhere. Lumber dealers on the Pacific coast can obtain pressure treated lumber from our Seattle plant.

Fungi destroyed these heavy beams in this west coast warehouse. Note the large areas rotted out. TRANSOTE protects lumber against fungi and rot.

THE WOOD PRESERVING CORPORATION

a **KOPPERS** *subsidiary*

Preserved Lumber for Every Purpose

Koppers Building, Pittsburgh, Pa.

AFFILIATE
NATIONAL LUMBER & CREOSOTING CO., TEXARKANA, ARK.-TEX.

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TREATING PLANTS

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CHARLESTON, S. C.
DENVER, COLO.
FINNEY, OHIO
GREEN SPRING, W. VA.
GRENADA, MISS.
HAGERSTOWN, MD.
HOUSTON, TEX.
KANSAS CITY, MO.
LARAMIE, WYO.
MONTGOMERY, ALA.
NASHUA, N. H.
NEWPORT, DEL.
NORTH LITTLE ROCK, ARK.
ORRVILLE, OHIO
REED CITY, MICH.
SALIDA, COLO.
SUPERIOR, WIS.
TEXARKANA, TEX.

Products

Pressure-treated wood foundation timbers, piling, columns, framework, joists, stringers, sub-flooring, flooring sills, doors, window frames, stairs, siding, roofing, plank, rafters, fence posts, pickets, rails, poles, posts, bridge materials, guard rails; dock, wharf and pier materials; treated wood for tanks, sumps and vats, cribbing, retaining walls, trench lining and covers, flumes, etc.

Stocks

Stocks of seasoned lumber are maintained at all times ready for immediate shipment in accordance with architects' specifications.

Types of Preservative Treatments

Creosote, made from coke oven tar, is the most effective preservative of wood against both decay and insects. It is also by far the most widely used, approximately 94% of the wood treated in this country being pressure treated with creosote or creosote mixtures (U. S. Department of Agriculture, 1935).

However, there are cases where color, odor and paintability of wood must not be appreciably changed. In those cases, preservative treatments are made under pressure with chemical solutions which do not alter the physical characteristics of the wood. When used above ground, chemically treated wood has given very satisfactory results. Proper pressure treatments with chromated zinc Chloride and Wolman salts are available at plants of THE WOOD PRESERVING CORPORATION where facilities are maintained for the proper drying, framing and clean treatment of the wood.

The Necessity for Preservatives

Because wood is subject to the attacks of decay and insects, its service life may be shorter than desired. The purpose of wood preservation is to provide practically permanent life. Thus, by treatment, the most common objection to the use of wood for structural projects is eliminated.

Decay of timber is caused by low forms of plant life called fungi. These fungi can only be destroyed with certainty by poisoning their food supply. THE WOOD PRESERVING CORPORATION does this by injecting approved preservative oils or chemicals into the wood under pressure.

Termites are the most commonly known and most destructive of wood destroying insects. Usually the wood preservative treatments that are effective against decay are effective also against termites.

Marine Borers attack and destroy wood submerged in salt water. Since they use the wood for shelter only, not for food, protection against marine borers presents different problems than in the case of decay or termites, and the only effective protection is heavy treatment, under pressure, with coal tar creosote.

The Necessity for Pressure Treatments

Wood preservatives must penetrate well into the wood, to be effective. Surface applications by brush, spray or dipping are not always effective, because the penetration is slight and the penetrated shell may be broken through by subsequent checks or abrasions and the untreated wood is then exposed to attack.

Typical Damage Caused by Decay When Untreated Wood Is Used in an Exposed Location

Salt-treated Sub-flooring Laid on Creosoted Stringers and Nailing Strips

All treated wood from THE WOOD PRESERVING CORPORATION is pressure treated by either the Full-cell (Bethell Process) or the Empty-cell (Lowry or Rueping Process). The type of process to be used depends upon the species of timber, its state of seasoning, and the purpose for which the timber is to be used. THE WOOD PRESERVING CORPORATION has a large technical staff, qualified to advise you fully about this.

Pre-Fabrication of the Wood

While the penetration of preservative treatments into wood under pressure is adequate for protection, complete penetration is not possible in all species. If timber is cut after treatment, there is danger of exposing untreated portions to attack. For this reason, all framing, forming or fabricating should be done before treatments. THE WOOD PRESERVING CORPORATION has plants equipped with modern woodworking machinery with which all fabrication can be done economically. The common practice is to furnish sketch or blueprint giving all dimensions for the timber. When the cutting of treated timber on the job is unavoidable, all newly-exposed surfaces should be given two coats of hot creosote.

Economics of Treated Wood

Railroads, public utilities and large industrial companies have used treated timber most continuously and most effectively, and there are abundant cost records showing the results of the use of treated wood as against untreated. Pressure-treated poles, piling, ties and other forms of wood structures are now in service after 30, 40 or more years of useful life.

The life of creosote pressure-treated wood may be estimated at a minimum of 25 years for the average industrial plant use (the average life of *untreated* wood for uses such as railroad ties is usually not over 5 years).

Cost of Treated Wood

A relatively small investment will provide all the treated lumber required for most buildings. For example—in the average small house calling for approximately 10,000 board feet of lumber, only certain parts need be treated, depending upon the construction. In such a structure an investment of $150.00 for treating the necessary lumber will often provide ample protection against decay and termites, and this is only a small percentage of the entire cost of the building.

The Use of Sapwood vs. Heartwood

Under certain conditions it has been the practice to specify a large percentage of heartwood content in lumber, to obtain longer life from untreated wood. Because of the increasing scarcity of this grade of lumber, it is steadily becoming more costly. Technical Bulletin No. 479 of the U. S. Department of Agriculture says:

"In the many tests which have been made on the various species of wood, no effect upon the mechanical properties of most species due to change from sapwood to heartwood has been found. In general, the conditions of growth that prevail when wood is first formed determine its strength properties; and whether heartwood or sapwood is the stronger depends on those conditions. Consequently, in one tree the heartwood may excel; and in another of the same species, the sapwood. Thus the heartwood of the Southern pines and of Douglas fir is not, as has often been supposed to be the case, intrinsically stronger than the sapwood."

While heartwood is more resistant to decay, it is not as readily penetrated by a preservative. Pressure treated sapwood is more durable than untreated heartwood; and the longer life given by deep penetration makes it desirable to have treated timber with a large content of sapwood. Thus, less expensive grades of lumber can be used instead of the more costly heartwood.

Types of Treated Wood for Various Uses

Treated timber can be used profitably for new construction or repair wherever timber is a suitable building material. The kind of wood best adapted to specific purposes depends upon both the requirements of the job and the availability of various species.

For example: Southern pine, Douglas fir, and oak are suitable materials for round piles. In the Eastern part of the country, however, Southern pine is most abundant in the sizes normally required, and it is used to a much greater extent than the other species mentioned.

Since local conditions of supply and use may alter the recommendations for timber, it is advantageous to consult the treating plant before any particular species or grade of wood is specified. Engineers of THE WOOD PRESERVING CORPORATION will gladly assist in formulating specifications for both the material and its treatment.

For structural timbers, Southern pine, oak and Douglas fir are suitable. Purchase should be based on price, if no unusual requirements exist.

For small structural lumber, siding, roofing, etc., Southern pine is generally best suited. It is easily nailed and not difficult to keep in place.

For platforms, crossing plank and similar installations where mechanical wear is severe, black gum is most desirable. The oaks and mixed hardwoods also will give satisfactory service.

For cross ties, switch ties, and bridge ties, any of the common species are used. The species generally used for industrial ties are the oaks, mixed hardwoods and Southern pine.

For cooling towers, coarse pine and Douglas fir are most suitable on account of their light weight.

Where Treated Wood Should Be Used

A complete list of the places in which preserved lumber is especially useful is unnecessary here, but in brief, these may be described as any portions of a structure in contact with or near the ground, in damp or poorly ventilated basements, or in contact with other timbers or with masonry girders, joists, stringers, subflooring, window frames, roof timbers, and shingles. In such places decay is certain if moisture accumulates in the wood, and in some localities attacks by termites soon destroy such timbers and make replacement necessary.

Creosoted Stringers and Understructure Timbers for Residences Resist Decay and Termite Attack

Salt-treated Sub-flooring Being Laid Over Creosoted Joists

APPALACHIAN HARDWOOD MANUFACTURERS, Inc.

REPRESENTING THE GREATER PROPORTION OF APPALACHIAN HARDWOOD PRODUCTION

414 Walnut Street, CINCINNATI, OHIO

APPALACHIAN OAK

FOR FINE ARCHITECTURAL WOODWORK

Appalachian Hardwood Region and Products

The Appalachian Hardwood Region is the mountainous area extending southwesterly from Pennsylvania to Georgia, as illustrated in the shaded portion of the insignia to the right.

In this region more than 2,000 sawmills each year normally produce in excess of one billion board feet of splendid Appalachian hardwood lumber, including Oak, Yellow Poplar, Chestnut, Cherry, Basswood, Birch, Beech, Maple, Ash and other species, as well as Oak, Beech and Maple flooring.

Availability of Appalachian Oak

Appalachian Oak lumber is widely distributed, and is readily available to architects through planing mills and cabinet makers. Each year hundreds of millions of feet of Appalachian Oak reach consuming markets through the usual channels of distribution.

Characteristics and Importance of Specifying Appalachian Oak

Growth conditions in some regions cause rapid tree development and thick annual rings, coarse grain effects and dense wood substance.

Favorable growth conditions affecting Appalachian hardwood timber impart unusual qualities to Appalachian Oak, long regarded as an ideal material for fine architectural woodwork. Rich soil, good drainage and temperate climate are factors which cause Appalachian Oak to develop slowly and uniformly, producing narrow annual rings and a fine, beautiful grain pattern.

The annual growth ring thickness in Oak logs is directly proportional to size and character of grain figure. Therefore, thin rings produce fine grain and texture which make Appalachian Oak unexcelled for the manufacture of hardwood products in which beauty and serviceability are desired.

Standard grading rules for hardwoods do not define character of grain or quality of texture; therefore, to identify source of material and to obtain Oak possessing beauty of grain and texture, as well as ability to remain in place, specify *Appalachian White or Red Oak.*

Grade, Effects and How to Specify

Appalachian White and *Red* Oak are available in all standard commercial grades and sizes, which include material for every purpose and effect of interest to architects. These grades offer many interesting and decorative possibilities.

Grades—Specify *Appalachian* White Oak in one of two grades: (a) Clear, (b) Sound Knotty or Antique (*Appalachian* Red Oak is available in clear grade only).

Grain Effects—Specify *Appalachian* White Oak in one of three grain effects: (a) *Plain Sawn* or flat grain, (b) *Rift Sawn* or comb-grain, (c) *Quarter Sawn* (may be qualified for small or large flake) *Appalachian* Red Oak available only in plain sawn material. (See illustrations below.)

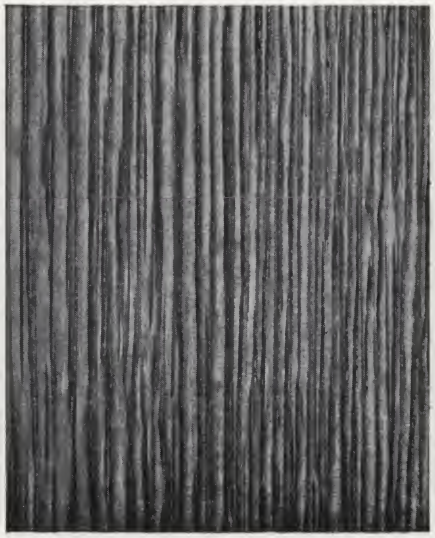
Veneers—Specify *Appalachian* White and Red Oak veneers of standard thickness of from 1/28 to 1/4 in. of three methods of production: (a) Sliced, (b) Sawn (both sliced and sawn are available in flat grain, comb-grain and quartered effect), (c) Rotary Cut. Sliced or sawn veneers produce the finer grain pattern. Rotary cut veneer, owing to the manner in which the sheet of wood is removed from the log, is characterized by a pronounced grain figure. For a fine, subdued grain pattern specify *sliced* or *sawn Appalachian* White Oak veneer, indicating the desired thickness and purpose of veneer.

Panels—For veneered panels specify *Appalachian Chestnut* or *Yellow Poplar* cores with *Poplar* cross-banding.

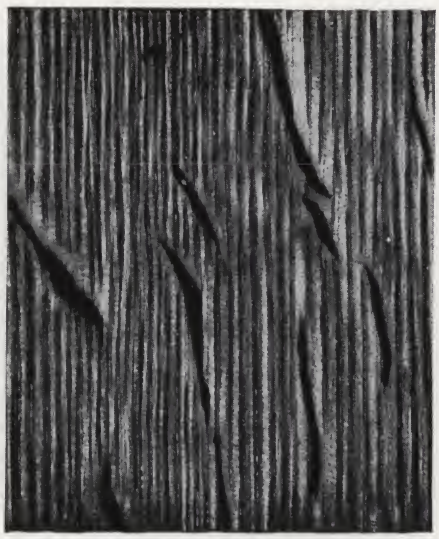
Typical Effects in Appalachian Oak

Scale of Grain Pattern FULL SIZE for First Four Illustrations

To obtain this effect specify "clear, plain sawn *Appalachian* White Oak"



This effect obtained by specifying "clear, rift sawn *Appalachian* White Oak"



Specify "clear, quarter sawn *Appalachian* White Oak, small flake" to obtain this effect

To obtain this effect specify "clear, plain sawn *Appalachian* Red Oak"

Specify *"Appalachian* White Oak with wormholes and sound knots" to obtain this *antique* effect

Specify *"Appalachian* Chestnut with wormholes and small sound knots" to obtain this *antique* effect

APPALACHIAN OAK FLOORING
FOR NAILED AND MASTIC INSTALLATION

Appalachian Oak Flooring has long been renowned for its excellent quality and beauty, no less than for the enduring service and satisfaction it gives. Millions of feet of this flooring are manufactured annually and can be obtained through flooring contractors and lumber distributors on specification.

Kinds, Grades and Sizes

Strip—Available in White and Red Oak in *plain* and *quarter-sawn stock* in standard grades of *Clear, Select,* No. 1 *Common* and No. 2 *Common.* Thickness $\frac{25}{32}$ in. and face widths 1½, 2 and 2¼ in. Stock ⅜ in. by 1½ and 2-in. face widths is made for *resurfacing old floors.* Sold on board foot measures.

Parquetry—*For Nailed Installation*—Available in White and Red Oak, *plain* and *quarter-sawn* tongued-and-grooved stock for *squares, herringbone* and *other* patterns, and in standard grades of *Clear, Select, No. 1 Common,* and *No. 2 Common* stock furnished in $\frac{25}{32}$-in. thickness, 1½-in. face *width* by 8, 10 and 12-in. *lengths* and 2¼-in. face *width* by 9, 11¼, 13½, 15¾ and 18-in. lengths. No 2 *Common grade* furnished only in mixed White and Red, plain and quartered stock. Sold on square foot surface measure.

For Mastic Installation—Supplied in same grades and sizes as parquetry stock to be nailed. Specify that stock for *Mastic* installation shall have flat back and be *specially milled* for mastic. Sold on square foot surface measure. For mastic installation concrete base should be *floated* to a true level.

Plank—*For Nailed or Mastic Installation*—Available in tongued-and-grooved *solid* boards for nailing only and *three-ply* planks for nailing or mastic in *plain* and *quarter-swan* White Oak or *mixed* in *First, Second* and *Antique* grades, the latter at approximately the same price as *Second* grade. Standard *thicknesses* $\frac{25}{32}$ in., widths 4 in. and up. For solid planks specify 4 to 8 in., inclusive. For *three-ply* with Oak face and Chestnut core and back, widths from 4 to 26 in. can be used successfully. The assortment of widths furnished is approximately an equal number of square feet of each width. Ends of planks are either grooved with splines furnished or tongued and grooved. *Solid* planks furnished with *square* or *beveled edges.* Three-ply *square* or *beveled edges* or *crack line.* Plugs, keys and back painting at additional cost. *Keys* furnished with *three-ply* stock. Sold on net square foot surface measure.

APPALACHIAN YELLOW POPLAR
FOR PAINTED AND ENAMELED WOODWORK

Appalachian Yellow Poplar has been prized for fine painted or enameled woodwork since early Colonial days.

Characteristics of Appalachian Yellow Poplar

Appalachian Yellow Poplar has a straight, fine grain and uniform texture. Its heartwood is greenish yellow and durable. The sapwood is white.

Paint and Enamel Holding Qualities—Unsurpassed for the following reasons: (a) *Yellow Poplar holds an enamel finish more securely* than do either the softer or the harder woods, because of its uniformity of texture and an optimum degree of porosity and hardness which makes for ideal enameling purposes. It mars less easily than the softer woods and, in the case of a sharp blow, the enamel will not flake from Yellow Poplar as readily as from the harder woods. (b) *Its grain pattern will not raise and show through the finish,* because it possesses no dense bands of summer wood. Enameled Appalachian Yellow Poplar will remain smooth permanently. (c) *It contains no oils or resins* to "bleed" through and ruin the finish.

Ability to Remain in Place—Another excellent quality of Appalachian Yellow Poplar. Owing to its uniform texture, moderate density and a natural resistance to expansion and contraction with changing atmospheric conditions, it is remarkably free from injurious swelling and shrinking and the resultant warping, twisting and splitting.

How to Specify

Specify *"Yellow Poplar"* and not "Whitewood."

Specify *"Appalachian Yellow Poplar"* to be assured of obtaining Yellow Poplar possessing superior *working, staying* and *enameling* qualities for which this wood is noted.

For the Finer Projects—Specify "thoroughly kiln dried, clear *Appalachian Yellow Poplar,* admitting sapwood and mineral stain."

For Utmost Economy—Specify "thoroughly kiln dried, clear *Appalachian Yellow Poplar* admitting sapwood, sound sap stain, mineral stain, occasional burls, tight pencil knots and other similar small, smooth defects which can be readily and properly covered with paint or enamel, and which *in no manner* will affect the finish holding qualities of the wood."

Paint Specifications—A light dove-gray shade of prime coat facilitates obtaining uniform coverage and color-effects and often results in the saving of one coat of enamel. Woodwork to be installed against masonry or outside walls should be *back painted* with a heavy coat of white lead and oil to minimize absorption of moisture. No interior trim should be taken into a new building until the structure has become *thoroughly dry.*

ARKANSAS SOFT PINE BUREAU

The Boyle Bldg., LITTLE ROCK, ARK.

GENERAL INFORMATION

WHAT IS ARKANSAS SOFT PINE?—Commercial Southern Yellow Pine is a general name for a number of closely related species consisting chiefly of:

Short-leaf .....*Pinus echinata*
Long-leaf .....*Pinus palustris*
Loblolly .....*Pinus taeda*
Slash .....*Pinus caribaea*
Pond Pine.....*Pinus rigida serotina*

The easily worked pine of uniform texture, produced chiefly from short-leaf stands in or near the Ozark Mountains, is called ARKANSAS SOFT PINE and is identified by trade and grade marks stamped on the material. (See paragraph on trade-marking.)

Symbol of Balanced Soft Texture

WHERE TO BUY—From responsible local lumber dealers and planing mills east of the Rockies and excepting the Gulf States east of the Mississippi River; elsewhere by special arrangement through the Bureau.

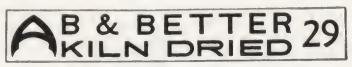
PHYSICAL CHARACTERISTICS—Tables of characteristics of the Southern pines often treat the 5 species as a group rather than as individual types of wood and for this reason may be misleading. ARKANSAS SOFT PINE possesses freedom from excessive pitch, has a light, soft, lustrous texture and fine grain which distinguish it from the more resinous and heavy southern pines.

WORKABILITY—Carpenters who have worked in Northern White Pine *(Pinus strobus)* endorse ARKANSAS SOFT PINE as the nearest approach to that famous wood in softness and workability. ARKANSAS SOFT PINE is a material of great toughness of fiber which cuts readily, holds nails securely, and does not split easily when nailed.

CHARACTER OF FINISH STOCK—It is from the thick, clear sapwood with its fine, lustrous texture and virtual absence of pitch that the highest grade of interior finish is manufactured. It is because of the large percentage of this clear material peculiar to ARKANSAS SOFT PINE timber that the wood attains its maximum of value and beauty when employed as interior trim and wall paneling. It is well adapted to paint and enamel finishing, as it absorbs the undercoating and enamel evenly. As there are no pitch streaks in ARKANSAS SOFT PINE interior trim, there is no possibility of raised grain. The absence of rosin or oil content insures against staining the finished surface from underneath. The ultimate finish equals in every respect that which is obtained by using more costly woods.

MOISTURE CONTENT—ARKANSAS SOFT PINE, in all grades, is accurately seasoned down to that moisture content which provides proper conditioning for the intended use of each item specified.

GRADE MARKING—A grade mark is something more than the individual shipper's idea of the grade—it is the industry's guarantee of proper grade and is founded upon close supervision and policing by the industry's inspection department.

GRADE  MARK

The illustration shows the grade mark which appears on ARKANSAS SOFT PINE *B & Better* grade. Grade marks identify each grade to and including *No. 3 Common.* The "A" trademark and the manufacturer's mill number completely identify the wood and its source. Complete grading rules will be furnished on request to the Bureau.

STRUCTURAL STRENGTH—ARKANSAS SOFT PINE possesses adequate strength for all stresses and loads to be expected in the construction of residences and those of stores and apartments of moderate size.

Grades below conform to American Lumber Standards for Dense material.

Grade	Unit Shear*	Bending Extreme Fibre	Modulus Elasticity	Perpendicular Compression
Dense Select Structural.	120	2,000	1,600,000	380
Dense Structural.....	120	1,800	1,600,000	380
Dense Structural SE&S.	120	1,600	1,600,000	380
Dense No. 1 Structural.	100	1,200	1,600,000	380

*Shear values of 150 or 175 lb. may be obtained in any grade by so specifying, without changing any other feature of the grading rule.

STUDS, JOISTS AND RAFTERS

Safe loads given are *net* safe loads per square foot—weight of joists themselves has been deducted. Stresses used are for *No. 1 Dimension.* Loads above the solid lines are governed by v = 100. Loads between the solid and dotted lines governed by f = 1200. Loads below dotted lines governed by E = 1,600,000, and will produce deflection less than span"/360.

Span	2 x 12's Spacing on Centers					2 x 10's Spacing on Centers					Span	2 x 8's Spacing on Centers					2 x 6's Spacing on Centers				
	12"	14"	16"	18"	20"	12"	14"	16"	18"	20"		12"	14"	16"	18"	20"	12"	14"	16"	18"	20"
10 ft.	279	238	209	186	168	190	162	143	127	113	6 ft.	198	170	148	132	120	110	95	83	74	66
11 ft.	230	196	172	153	138	156	133	119	104	93	7 ft.	169	145	127	112	102	94	81	71	63	56
12 ft.	192	165	144	128	116	131	111	109	87	78	8 ft.	147	127	111	98	89	82	71	62	55	49
13 ft.	163	140	122	109	99	111	94	84	74	66	9 ft.	131	113	98	87	79	73	63	55	49	44
14 ft.	140	120	105	93	84	92	81	72	63	57											
											10 ft.	116	110	88	77	71	66	55	49	44	39
											11 ft.	95	83	72	63	58	54	45	40	36	32
15 ft.	121	102	90	80	72	82	70	61	54	49	12 ft.	80	69	60	53	49	45	37	33	30	26
16 ft.	98	83	73	65	59	67	56	50	44	40	13 ft.	67	59	51	45	41	38	31	28	25	22
17 ft.	81	69	61	54	49	55	47	41	36	33	14 ft.	58	50	44	38	35	32	27	24	21	...
18 ft.	67	57	50	44	41	46	39	34	30	27											
19 ft.	57	48	42	37	34	39	32	29	25	22	15 ft.	49	43	37	32	30	27	23	20	...	...
20 ft.	48	40	36	31	29	32	27	24	21	...	16 ft.	40	34	30	26	24	22	...	...	...	...

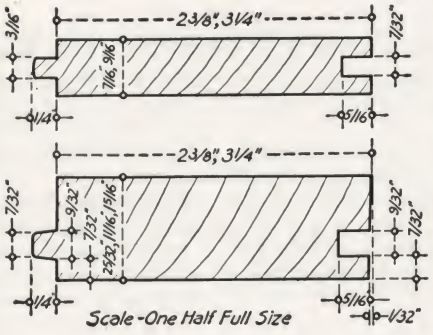
FINISH FLOORING

PINE FLOORING—It is from the heavier butt logs that flooring stock is cut in order to take advantage of the more dense growth which, in the finished product, will stand up under hard wear. Heart face, edge grain ARKANSAS PINE flooring is practically indestructible.

ARCHITECT'S SPECIFICATIONS—The specifications to be complete must clearly state a choice in the following items:

1. Plain end or End-matched.
2. Grade.
3. Method of sawing.
4. Proportion of Heart Face.
5. Face width and thickness.
6. Scratched or hollow-backed if $\frac{25}{32}$ in. thick or thicker.

GRADES OF PLAIN END FLOORING—The grades usually specified in good construction are either *B & Better* or *No. 1 Common.* The *B & Better* grade consists of pieces having a very limited number of minor defects on the face side, in standard lengths of 8 to 20 ft. *No. 1 Common* consists of pieces having medium to serious appearance defects but none which affect the mechanical soundness of the wood, and is suitable for use under carpets or linoleum, or out of the way places, and is milled in lengths of 6 to 20 ft. *No. 2 Common* admits all pieces that will not grade as good as *No. 1,* and which can be used as low-cost floors without waste of more than 10% of the length of any piece.



GRADES OF END-MATCHED—In using End-matched material, the carpenter does not need to saw except when he reaches the side of a room. Thus, practically 100% of the flooring material is used and a large part of waste labor is eliminated. Where end joints occur, they are permanently maintained flush with each other and adjoining pieces. Grades are the same as in Plain end flooring.

EDGE GRAIN FLOORING—*Edge Grain, Rift Grain, Vertical Grain* or *Quarter Sawn Flooring* receives painter's finish evenly, is most durable.

FLAT GRAIN FLOORING—*Flat Grain, Plain Sawn* or *Slash Grain* flooring is suitable for general flooring use where strict economy is necessary.

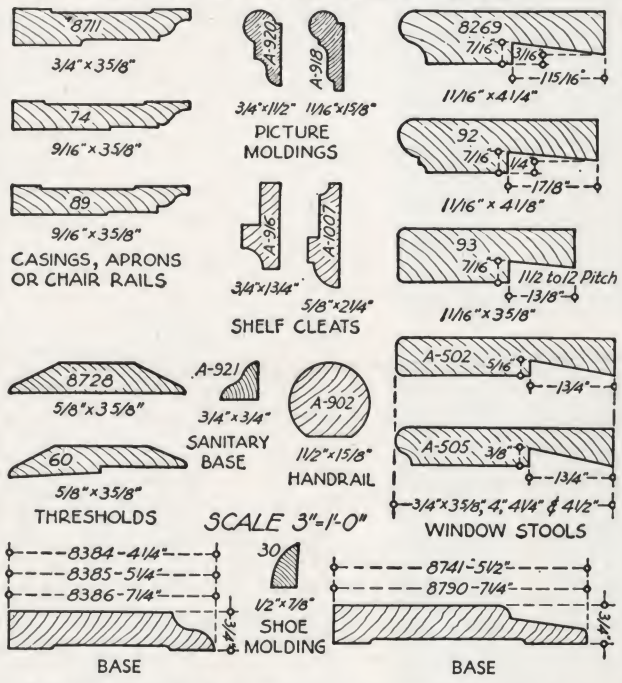
HEART FACE FLOORING—If unusual durability and *uniform color* are required, *Heart Face* flooring should be specified. *Heart Face* flooring is free from sapwood on the face side. It is unusually decay-resistant.

GRADES TO SPECIFY**

Use	Arkansas Soft Pine Grade Recommended
Sills on foundation wall, floor more than 18" above ground	No. 1 Arkansas Dimension
Sills on foundation wall, floor within 18" of ground	No. 1 Dense Arkansas Dimension (*) or (†)
Sills on posts or piers, floor more than 18" above ground	No. 1 Dense Arkansas Timbers
Sills on posts or piers, floor within 18" above ground	No. 1 Dense Arkansas Timbers (*) or (†)
Basement posts or columns	No. 1 Dense Arkansas Timbers
Girders	No. 1 Dense Arkansas Timbers, No. 1 Dense Arkansas Dimension, or No. 1 Dense Arkansas Laminated
Floor joists over 18" above ground	No. 1 Dense Arkansas Timbers
Floor joists within 18" of ground	No. 1 Dense Arkansas Dimension
Roof rafters and ceiling joists	No. 1 Arkansas Dimension
Studding	No. 1 Dense Arkansas, No. 1 or No. 2 Arkansas Dimension
Lath	No. 1 Lath
Sub-flooring and sheathing	Arkansas Center-Matched in End-Matched or Plain-end, No. 2 or No. 3 Grade
Finish flooring exposed	B & Better Edge Grain End-matched or Random length Plain end
Finish flooring to receive linoleum or carpet	No. 1 Common or No. 2 Common Flat Grain End-matched or Plain end
Porch flooring	B & Better Heart Edge Grain Plain End or B & Better Flat Grain Plain End, treated
Drop siding, interior trim, exterior trim, window and door frames	B & Better
Exterior trim	B & Better (Back-primed with white lead or aluminum paint)

†All Heart. *Preservative treated. **Complete grading rules furnished on request to the Bureau.

STANDARDIZED TRIM, MOULDINGS, ETC.



NOTE—Outside New England the 8000 Molding List is standard. Numbers carrying a letter prefix are from the Bureau's "New England Moulding Book." Copies of both showing all patterns will be furnished on request to the Bureau.

NOTE TO SPECIFICATION WRITERS: MANDATORY—All material furnished under these specifications for carpentry, flooring, finishing, woodwork, etc., shall bear the ARKANSAS SOFT PINE grade-mark. Additional data for simplified practice is included in the Bureau's Don Graf Data Sheets, a set of which will be mailed on request. Address: ARKANSAS SOFT PINE BUREAU, Boyle Building, Little Rock, Arkansas.

CALIFORNIA REDWOOD ASSOCIATION

405 Montgomery Street
SAN FRANCISCO, CAL.

CHICAGO
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Redwood Sales Co.*

NEW YORK
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Redwood Sales Co.*

832 West 5th Street
LOS ANGELES, CAL.

SAN FRANCISCO
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Dolbeer & Carson Lumber Co.
Holmes Eureka Lumber Co.
Hobbs, Wall & Co.

SANTA CRUZ
Monterey Bay Redwood Co.

KANSAS CITY
Hammond Redwood Co.

155 E. 44th Street
NEW YORK, N. Y.

LOS ANGELES
Hammond Redwood Co.
The Pacific Lumber Co.
Union Lumber Co.
Dolbeer & Carson Lumber Co.
Holmes Eureka Lumber Co.
Hobbs, Wall & Co.

NEW ORLEANS
Hammond Redwood Co.

*ADDRESS INQUIRIES TO REDWOOD SALES CO., SAN FRANCISCO

GENERAL CHARACTERISTICS OF REDWOOD

DURABILITY—Rated by Forest Products Laboratory as one of three American softwoods whose heartwood is "durable even under conditions favoring decay."

TERMITE RESISTANCE—Heartwood may be used without preservative treatment in portions of building liable to termite attack. The natural toxic element in Redwood is stated to be "four times as toxic as zinc chloride."

SHRINKAGE—Forest Products Laboratory in tests of all American commercial woods shows Redwood lowest in volumetric shrinkage. Correspondingly high ability to withstand tendency to cup, warp, twist, check or split.

PAINTABILITY—Redwood has high ability to take and hold paint coatings. Using uniform quality of paint, Forest Products Laboratory tests show integrity of coating on Redwood lasts as much as 40% longer than on other commercial species.

NATURAL FINISH—Color, texture, and grain of Redwood are particularly well adapted for both interior and exterior uses in natural finishes. Examples such as Santa Fé Super Chief train, Sun Valley Lodge and Joseph Urban's designs may be cited.

NAILING—Redwood does not require a special nail but because of the great durability of the wood itself it is recommended that a durable nail be used. For siding and exterior trim we recommend a hot dipped galvanized nail or a copper nail.

SCREWS—Redwood holds screws satisfactorily but care should be used when applying. Screws should be turned in with screwdriver and not driven in with hammer. The hammer method of applying screws in any wood tears down the cell structure and lessens the holding ability considerably. Brass or chromium screws for interior application present a novel and pleasing appearance.

GLUING—Because of the cellular structure of Redwood, glued joints are as strong as the wood itself.

INSULATING QUALITY—Redwood ranks, by University of Minnesota tests, in upper 20% of American woods in thermal insulating quality.

WORKABILITY—Works easily. Smooth finish obtainable with hand or machine tools.

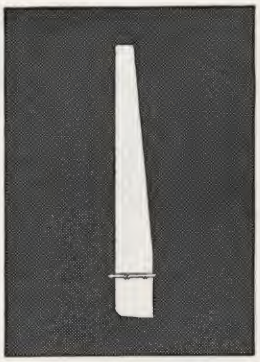
STRENGTH PROPERTIES*

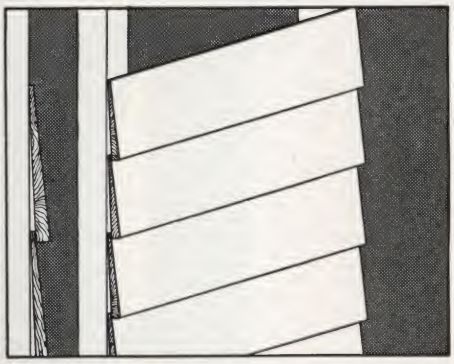
Commercial and botanical name of species	Moisture condition†	Specific gravity	Static bending					Impact bending		Compression parallel to grain		Compression perpendicular to grain	Shear parallel to grain	Hardness	
			Fiber stress at proportional limit	Modulus of—		Work to—		Fiber stress at proportional limit	Height of drop causing complete failure (50 lb. hammer)	Fiber stress at proportional limit	Maximum crushing strength	Fiber stress at proportional limit	Maximum shearing strength	Load required to embed a 0.444-inch ball to ½ its diameter	
				Rupture	Elasticity	Proportional limit	Maximum load							End	Side
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			Lbs. per sq. in.	Lbs. per sq. in.	1,000 lbs. per sq. in.	In.—lb. per cu. in.	In.—lb. per cu. in.	Lbs. per sq. in.	Inches	Lbs. per sq. in.	Lbs. per sq. in.	Lbs. per sq. in.	Lbs. per sq. in.	Lbs.	Lbs.
Redwood (Sequoia sempervirens)	**G**	**.38**	**4,800**	**7,500**	**1,180**	**1.18**	**7.4**	**8,900**	**21**	**3,700**	**4,200**	**520**	**800**	**570**	**410**
	D	**.40**	**6,900**	**10,000**	**1,340**	**2.04**	**6.9**	**10,200**	**19**	**4,560**	**6,150**	**860**	**940**	**790**	**480**
Cedar, Port Orford (Chamaecyparis lawsoniana)	G	.40	4,000	6,200	1,420	.65	7.4	9,200	22	2,770	3,130	350	830	460	400
	D	.42	7,700	11,300	1,730	1.97	9.1	13,500	28	5,890	6,470	760	1,080	730	560
Cedar, western red (Thuja plicata)	G	.31	3,200	5,100	920	.63	5.0	6,900	17	2,470	2,750	340	710	430	270
	D	.33	5,300	7,700	1,120	1.44	5.8	8,600	17	4,360	5,020	610	860	660	350
Cypress, southern (Taxodium distichum)	G	.42	4,200	6,600	1,180	.91	6.6	8,800	25	3,100	3,580	500	810	440	390
	D	.46	7,200	10,600	1,440	2.15	8.2	10,400	24	4,740	6,360	900	1,000	660	510
Douglas fir (coast region) (Pseudotsuga taxifolia)	G	.45	4,800	7,600	1,550	.85	6.8	9,800	24	3,410	3,890	510	930	510	480
	D	.48	8,100	11,700	1,920	1.96	8.6	12,700	30	6,450	7,420	910	1,140	760	670
Hemlock western (Tsuga heterophylla)	G	.38	3,400	6,100	1,220	.57	6.8	8,100	22	2,480	2,990	390	810	520	430
	D	.42	6,800	10,100	1,490	1.82	7.5	12,400	26	5,340	6,210	680	1,170	940	580
Pine, northern white (Pinus strobus)	G	.34	3,100	5,000	1,020	.54	5.2	6,700	17	2,060	2,490	290	660	310	310
	D	.36	6,000	8,800	1,280	1.59	6.7	9,500	19	3,680	4,840	550	860	500	400
Pine, ponderosa (Pinus ponderosa)	G	.38	3,100	5,000	970	.59	5.1	6,800	20	2,070	2,400	360	680	300	310
	D	.40	6,300	9,200	1,260	1.85	6.6	9,800	17	4,060	5,270	740	1,160	550	450
Longleaf (Pinus palustris)	G	.54	5,200	8,700	1,600	.95	8.9	10,100	35	3,430	4,300	590	1,040	550	590
	D	.58	9,300	14,700	1,990	2.44	11.8	15,400	34	6,150	8,440	1,190	1,500	920	870
Shortleaf (Pinus echinata)	G	.46	3,900	7,300	1,390	.63	8.2	8,600	30	2,500	3,430	440	850	410	440
	D	.51	7,700	12,800	1,760	1.93	11.0	13,600	33	5,090	7,070	1,000	1,310	750	690
Spruce, eastern (Picea sp.)	G	.38	3,300	5,600	1,110	.57	6.5	7,000	21	2,120	2,600	290	710	390	340
	D	.40	6,500	10,100	1,440	1.68	8.4	11,400	22	4,160	5,590	590	1,070	630	490

* Excerpt from Table No. 8, Wood Handbook, Forest Products Laboratory, U. S. Department of Agriculture.
† G = unseasoned. D = dry.

ANZAC SIDING

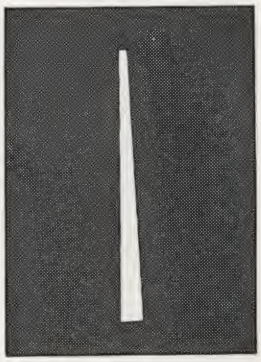
Surfaced four sides.
Widths: Pattern 440, 8 in.; pattern 441, 10 in.; pattern 442, 12 in.
Thickness $\frac{23}{32}$ in.
Laid with 1¼ in. lap. Weather groove, and spacing line.
To determine exposure deduct 1¾ in. from nominal size.

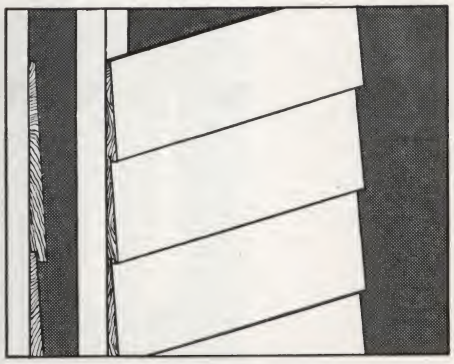




PLAIN BEVEL SIDINGS

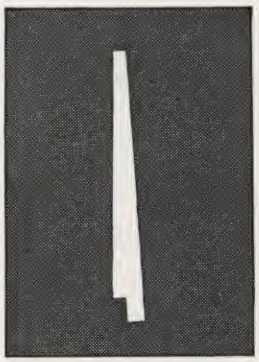
Rough or surfaced face.
Net width ½ in. less than nominal.
Widths: Pattern 320, 4 in.; pattern 321, 5 in.; pattern 322, 6 in.; pattern 323, 8 in.
Butt Thickness $\frac{15}{32}$ in.—tip $\frac{3}{16}$ in.
Widths: Pattern 326, 8 in.; pattern 327, 10 in.
Butt Thickness $\frac{9}{16}$ in.—tip $\frac{3}{16}$ in.
Widths: Pattern 330, 8 in.; pattern 331, 10 in.; pattern 332, 12 in.
Butt Thickness ¾ in.—tip $\frac{3}{16}$ in.
Lap. As desired.

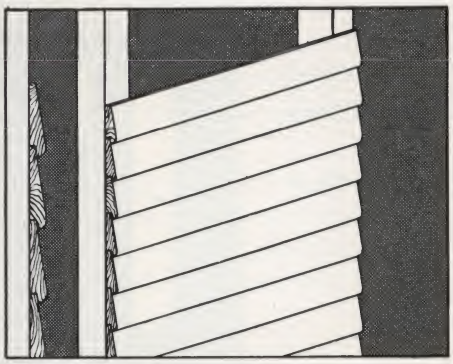




RABBETED BEVEL SIDING

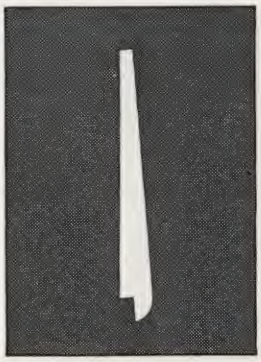
Surfaced face—
Widths: Pattern 360, 4 in.; pattern 362, 6 in.; pattern 363, 8 in.
Butt Thickness ½ in.—tip $\frac{3}{16}$ in.
Widths: Pattern 370, 4 in.; pattern 371, 6 in.; pattern 372, 8 in.; pattern 373, 10 in.; pattern 374, 12 in.
Butt Thickness $\frac{11}{16}$ in.—tip $\frac{9}{32}$ in.
Widths: Pattern 375, 8 in.; pattern 376, 10 in.; pattern 377, 12 in. (Called "Mt. Vernon" in these sizes.)
Butt Thickness $\frac{27}{32}$ in.—tip ⅜ in.
Exposed Width 1 in. less than nominal.
Rough face—
Widths: Pattern 380, 4 in.; pattern 382, 6 in.; pattern 383, 8 in.
Butt Thickness ⅝ in.—tip $\frac{3}{16}$ in.
Widths: Pattern 390, 4 in.; pattern 391, 6 in.; pattern 392, 8 in.; pattern 393, 10 in.; pattern 394, 12 in.
Butt Thickness ¾ in.—tip $\frac{9}{32}$ in.
Widths: Pattern 395, 8 in.; pattern 396, 10 in.; pattern 397, 12 in. (Called "Mt. Vernon" in these sizes.)
Butt Thickness $\frac{27}{32}$ in.—tip ⅜ in.
Exposed Widths 1 in. less than nominal.





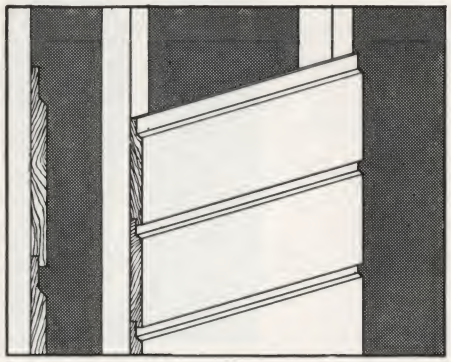
ROUND EDGE BEVEL SIDINGS

Surfaced Face—
Widths: Pattern 400, 4 in.; pattern 401, 6 in.; pattern 402, 8 in.
Butt Thickness ½ in.—tip $\frac{3}{16}$ in.
Widths: Pattern 410, 4 in.; pattern 411, 6 in.; pattern 412, 8 in.; pattern 413, 10 in.; pattern 414, 12 in.
Butt Thickness $\frac{11}{16}$ in.—tip $\frac{9}{32}$ in.
Exposed Widths 1 in. less than nominal



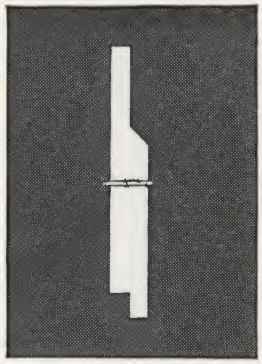
V RUSTIC SIDINGS

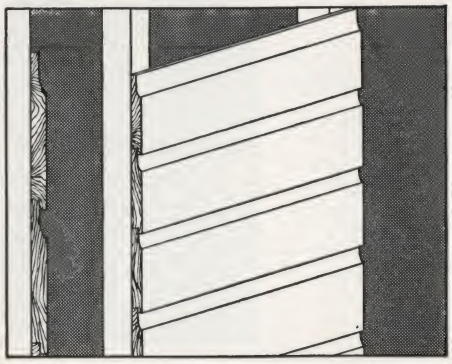
S4S Shiplap.
Widths: Patterns 290 and 300, 6 in.; patterns 291 and 301, 8 in.. (Also center V.)
Thickness $\frac{9}{16}$ in.
Widths: Pattern 292, 4 in.; patterns 293 and 303, 6 in.; patterns 294 and 304, 8 in.; pattern 295, 10 in.
Thickness $\frac{23}{32}$ in.
Exposed Width 1 in. less than nominal.
Also 6 in., 8 in., widths $\frac{23}{32}$ in. thickness.
T&G—V and Center V (patterns 116 and 116½).
Shiplap (Plain S4S).
Widths: Pattern 260, 4 in.; pattern 261, 6 in.; pattern 262, 8 in.; pattern 263, 10 in.; pattern 264, 12 in.
Thickness $\frac{23}{32}$ in.
Exposed Widths 1 in. less than nominal.



CHANNEL RUSTIC SIDINGS

S4S.
Width: Pattern 273, 10 in.
Thickness: $\frac{25}{32}$ in.
Exposed Width 1 in. less than nominal.
See also "Wall Boarding."



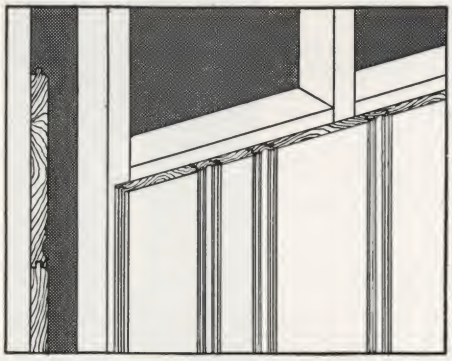


COVE RUSTIC SIDINGS

S4S.
Widths: Pattern 269, 4 in.; pattern 270, 6 in.; pattern 271, 8 in.; pattern 272, 10 in.
Thickness: $\frac{25}{32}$ in.
Exposed Width 1 in. less than nominal.

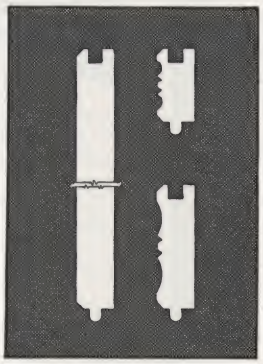
"ECONOMY" BEVEL SIDINGS

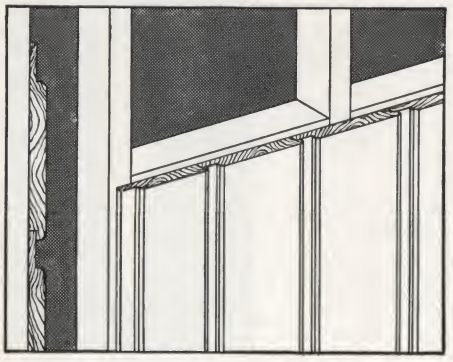
Widths: Patterns 313, 315, and 317, 5 in.; patterns 314, 316, and 318, 7 in.
Butt Thickness: 5 in., $\frac{11}{64}$ in.; 7 in., $\frac{13}{64}$ in.; Tip $\frac{5}{32}$ in.
Exposed Width 1 in. less than nominal.
Available in square, bevel and round edges.



WALL BOARDING (Board & Flush Batten)

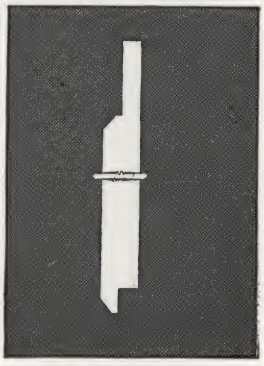
T&G (S4S) (for vertical or horizontal application).
Board Widths: Pattern 529, 6 in., 8 in., 10 in., 12 in.
Batten Widths: Pattern 529-A, 3 in.; pattern 529-B, 2 in.
Thickness: $\frac{25}{32}$ in.
Exposed Width for one board and one batten 1¼ in. less than nominal.





WALL BOARDING

Shiplap (S4S) (for vertical or horizontal application).
Widths: Pattern 523, 8 in.; pattern 524, 10 in.; pattern 525, 12 in.
Thickness: $\frac{25}{32}$ in.
Exposed Width 1 in. less than nominal.



Note: Redwood Sidings should be specified by pattern number. Be sure to use the right grade, properly seasoned. Write on your business letterhead for free copies of:

1. Grading Rules for Redwood
2. Patterns of Worked Redwood Lumber
3. Standard specification forms and grade use guide.

DESCRIPTION OF GRADES

Standard Yard Grades

Clear All Heart
A Grade
B Grade
Foundation Grade
Number One Heart Common
Number Two Common
Number Three Common

Character of Grades and Typical Uses

Clear All Heart Grade—The highest grade of lumber manufactured in California Redwood; a super grade, higher than any called for by American Lumber Standards. It is well manufactured from sound, live, all heartwood, and is selected for texture, appearance, milling and working qualities, as well as for freedom from sapwood, knots, pitch seams, etc. It may be used with confidence for the most exacting purposes. It is perfectly adapted to natural finishes and is used for the highest quality exterior and interior trim, sidings, paneling, ceiling, partitions, mouldings, and millwork. The natural preservatives contained in California Redwood insure maximum resistance to decay and insect attack. Its freedom from pitch and resinous substances insures long life to any decorative coating.

Clear All Heart Vertical Grain is a special selection from Clear All Heart. It shows 100% vertical grain when laid, is well manufactured, has no imperfections, and no sapwood.

"A" Grade—Practically free from knots, pitch, seams or other defects. It may contain a small amount of sapwood and individual boards may vary in texture, grain and appearance. It is suitable for natural finish where variations in color and appearance are desired, and for high quality painted exterior and interior trim, including sidings, rustic, ceiling, partitions and mouldings.

"B" Grade—Admits sapwood, discoloration, birdseye and occasional small tight sound knots. It is entirely suitable and practical for paint finishes, and natural finishes where variations in color and pattern are desired.

Foundation Grade—Grade marked lumber selected from No. 1 Heart Common for characteristics which ensure high resistance to decay and termite attack, and durability under severe service conditions.

No. 1 Heart Common Boards and Dimension—Well manufactured from sound live heartwood, and is recommended for use where strength and lasting qualities, rather than appearance, are important. This grade is also recommended for purposes where durable utility lumber is desired and for applications such as use in contact with the soil or exposed to the elements where high resistance to decay and insect attack is essential.

It admits sound, tight knots up to the maximum of 1½ in. in narrow boards or 2½ in. in 12-in. boards. Sapwood is not permitted.

For Dimension in this grade, strength and durability are the primary considerations rather than appearance. No. 1 Heart Common is manufactured in timber sizes and is widely used for heavy construction where the higher strength values assigned to Structural Redwood grades are not essential.

No. 2 Common—Suitable for use in ordinary construction and is available in the same sizes and workings as No. 1 Heart Common. Occasional knotholes, shakes, checks and sapwood are permitted. Maximum knot sizes are limited to 2 in. in the narrow widths and 3½ in. in the 12-in. boards.

No. 3 Common—The lowest grade manufactured in Redwood and is practically all marketed in local territory. It is suitable for temporary construction and for many uses which are not exacting.

Low shrinkage, high paint retention values, and a naturally high resistance to weathering (even without paint) make Redwood particularly suitable for use as exterior trim. Porch members, gutters, cornices and other exterior detail are easily fashioned in Redwood, making for tight, trouble-free joints.

Standard patterns of Redwood sills, gutters, log cabin sidings, mouldings and Picket Pack fencing are readily available at all lumber distribution points.

Redwood shingles are manufactured in accordance with Commercial Standard CS 31-33 of the U. S. Department of Commerce. Number 1 shingles are 100 per cent heartwood, edgegrain, not less than 16 in. long or 3 in. wide. Butt thickness is ⅖ of an inch. Four bundles cover 100 square feet of roof with 5-in. exposure.

California Redwood Association is a non-profit organization, serving as a clearing house for technical and comparative data on California Redwood. It will undertake to supply any type of information to architects, draftsmen, and engineers. Much material is in printed form ready for mailing.

Specific inquiries not covered by published material will be answered individually. Write the California Redwood Association, San Francisco, Los Angeles or New York.

MEMORANDA

DRIWOOD CORPORATION

ASSOCIATED COMPANY
IMPROVED OFFICE PARTITION CO., INCORPORATED

TELEPHONES
WHitehall 3-2420, 2421

40 Rector Street
NEW YORK, N. Y.

REPRESENTATIVES IN
PRINCIPAL CITIES

For Driwood and Telesco Office Partitions and Railings, see File Index

DRIWOOD PERIOD MOULDINGS IN ORNAMENTED WOOD

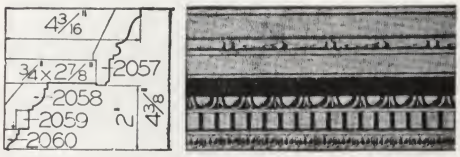
Driwood Period Mouldings in Ornamented Wood are authentic in design and architecturally correct and are *not composition or plaster.* Driwood Period Mouldings are made from Driwood Lumber scientifically air and kiln dried; they will not chip, warp or crack. Unlike hand-carved mouldings, Driwood Mouldings are moderate in cost and extremely economical for use in even the most elaborate decorative schemes.

DRIWOOD
TRADE MARK REG.

Driwood Period Mouldings have all the beauty and depth of hand carving. They will lend beauty, charm, distinction and richness reminiscent of the great mansions from which they derive their inspiration.

119 varieties of mouldings are available in poplar and red gum—the former being particularly useful for white or color work. The red gum can be stained to produce an excellent finish in either mahogany or walnut. Also furnished (to order) in genuine maple, walnut, oak, mahogany or pine. Supplied in lengths of 6 to 16 ft.

Ceiling Cornices



Assembly CC-15

Assembly CC-25

Assembly CC-29

Wall Panel Mouldings

Design 2117
Proj. 3/8"; 1 3/8" high

Design 2091
Proj. 9/16"; 1 3/4" high

Driwood Mouldings are restoring the demand for ornamented moulding for such uses as:

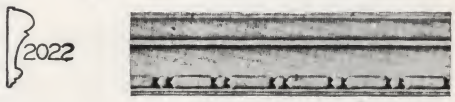
- Cornices
- Wall Panels
- Pilasters
- Chair Rails
- Ceiling Panels
- Picture Moulding
- Door Heads
- Bases

Special Designs to Order

A Service Bureau is maintained to co-operate with architects, interior decorators and others to determine the adaptability of Driwood Period Mouldings to specific requirements.

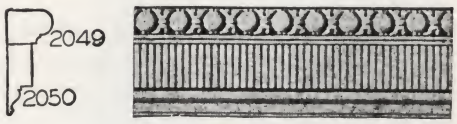
Special designs can readily be produced. Estimates furnished promptly without obligation.

Chair Rails



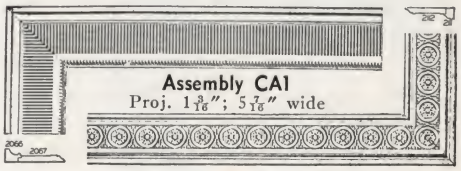
Assembly CR-3
Proj. 1 3/8"; 2 1/2" high

Assembly CR-4
Proj. 1 3/8"; 2 1/2" high



Assembly CR-6
Proj. 1 1/2"; 3 5/16" high

Door and Window Casings



Assembly CA2
Proj. 1 1/16"; 4 1/2" wide

Left:
Door Head No. DH-2
Made entirely from Driwood Mouldings.
Details on request

Right:
Door Head No. DH-1
Made entirely from Driwood Mouldings.
Details on request

HENRY KLEIN
CREATIONS

Only a few of the hundreds of styles of Driwood Period Mouldings are shown above
A Catalog of the Complete Line showing many Interesting Combinations sent on request

MAHOGANY ASSOCIATION, INC.

TELEPHONE
CENtral 8835

75 East Wacker Drive, CHICAGO, ILL.

What Is Genuine Mahogany?

Genuine Mahogany is derived only from several species of the Mahogany (Swietenioideae) tribe of the Mahogany family (Meliaceae), and is found only in the West Indies, America and on the west coast of Africa. No Mahogany grows naturally in any part of the Far East. Wood sold under the trade name "Philippine Mahogany" is not genuine Mahogany and is no more closely related botanically to genuine Mahogany than gum, birch or oak. Wherever there is any doubt as to whether the Mahogany supplied is in fact genuine Mahogany, samples may be sent to the Forest Products Laboratory of the U. S. Department of Agriculture, Madison, Wis., for identification.

West Indian Mahogany (Swietenia)—(Cuba, San Domingo, Haiti.) This is the hardest, heaviest, closest grained of all varieties of Mahogany, runs slightly richer and darker in color, comes from smaller, more defective trees and is specified where extra hardness or closeness of grain is desired.

Tropical American Mahogany (Swietenia)—(Mexico, Central America, South America, including Tabasco, Honduras, Nicaragua, Peru and the Amazon.) This variety is moderately hard and heavy but lighter in color and weight than West Indian. The trees are large and very free from defects.

African Mahogany (Khaya)—(Gold Coast, Ivory Coast, West Africa.) This variety averages lighter in weight and color and is not quite as hard or as close grained as American or West Indian. The trees are enormous and exceptionally free from defect. A very much larger proportion of the wood is figured than in other varieties.

Mahogany Lumber

For interior work and paneling American and African Mahogany are most frequently used, as these varieties are noted for fine lengths and widths and freedom from defects. FAS, clear face and strip grades are suitable for interior woodwork. Although Firsts and Seconds, in accordance with N.H.L.A. rules run 6 in. and wider, 8 ft. and longer, lumber 17 in. and wider is made, while, for special purposes, boards from 30 to 40 in. are available. Also lengths 17 ft. and up and even 25 ft. and up are produced. In thickness, stock up to 4 in. is regularly produced, and up to 6 in. is available.

Owing to the commercial availability and moderate cost of Mahogany lumber of good widths and lengths, solid Mahogany is frequently used in architectural woodwork and furniture. Mahogany is easy to work and scientific tests show that the wood shrinks less, expands less and warps less than any other fine cabinet wood in use today.

Figured Mahogany Lumber

Specially selected figured lumber is available in American and African Mahogany in grades of No. 1 Common and better. The premium for such stock is quite modest, and the lumber produces unusually beautiful cabinet work.

"After All—There is Nothing Like Mahogany"

Flat Cut

Figured Flat Cut

Mottle

Fiddle

Stripe

Broken Stripe

Crotch

Swirl

Mahogany Veneers

There is a great wealth of variety and figure in Mahogany. As is the case with lumber, lengths, widths and freedom from defect are characteristic of Mahogany veneers. No other cabinet wood offers the variety from which to make a selection. Many types are produced in quantity which makes possible large production cuttings of a uniform character of figure.

Standard sliced veneers are cut 1/28 in. thick. Sawn veneers most commonly are manufactured 1/20, 1/8, 3/16 and 1/4 in. thick. While other thicknesses can be obtained, these thicknesses offer by far the best selection. Where lengths greater than 16 ft. are required, it is necessary to use sawn veneers.

Mahogany Plywood

For information on Grade Rules, see Bureau of Standards document CS35-35 Plywood, Government Printing Office, Washington, D. C. Price 10c.

Quality in Cabinet Work

There are no official standards for fine cabinet work, but a safe rule is to employ a firm that has a record for doing fine work. On request, this office will supply a specimen specification form for Mahogany cabinet work.

Design in Mahogany

Through historical use and general acceptance, Mahogany is ideal for reproductions and adaptations of the 18th century masters. It is ideal for carving. With its rich, mellow appearance, beauty of grain and depth of figure, Mahogany also offers a striking medium for the sheer surfaces that are characteristic of Modern design. It is also ideal for combining with other fine cabinet woods such as satinwood or primavera. It is widely used for stair rails, base board, doors with painted trim and chair rails. It costs surprisingly little more than common woods. When Mahogany floors are specified, West Indian or Cuban Mahogany should be used.

Mahogany Finishes

Good finishing on Mahogany pays a large dividend in permanent satisfaction, while bad finishing may ruin the finest in design, material and workmanship. Mahogany is not a "red" wood and should not be stained that color. All *deep stains and high gloss surfaces should be avoided.* Factory-applied finishes under controlled conditions are superior to finishes applied on the job after installation. Modern technique in Mahogany finishes offers serviceable finishes that approximate the rich beauty so admired in many famous museum pieces.

These finishes, unstained or only lightly stained, ranging from sherry to a rich golden brown, flat or dull rubbed, bring out the full beauty of the wood. Such finishes permit the mellowing with age that is so pleasing in Mahogany. Bleached finishes or Blonded Mahogany are being used in modern designs.

Send for Mahogany finishing bulletin.

Mahogany Doors

There is perhaps no richer or more interesting treatment on interior than to use rich Mahogany doors with painted woodwork or where woodwork has been eliminated, the light cream colored Georgian woodwork and paneling with paneled Mahogany doors is a classical style of rare beauty. There is no item in the woodworking field where the best materials and workmanship pay as big a dividend in satisfactory service as in doors of Mahogany. Mahogany, of all cabinet woods, is the least susceptible to atmospheric changes, therefore makes doors that keep their appearance and shape through the years. A wide choice in Mahogany doors is available, not only in traditional panel doors but also flush doors for the more modern type of rooms. Stock doors and stock woodwork of Mahogany may be secured from high grade manufacturers.

The Mahogany Book Second Edition

This 80-page brochure should be in every architect's office. Profusely illustrated, it gives full data on sources of supply, physical characteristics, woodworking properties, types of grain and figure, periods and utilization. The supply is limited so write for your copy today.

The Mahogany Labels

The MAHOGANY ASSOCIATION, INC., issues official labels to cabinetmakers producing a genuine Mahogany product. In specifying woodwork or paneling these labels prevent the possibility of substitution. Send for circular giving full details.

PAGE AND HILL CO.

Producers of Materials for Real Log Houses of Western Red Cedar

1015 Plymouth Building
MINNEAPOLIS, MINN.

50 Church Street
NEW YORK, N. Y.

A Private Mountain Retreat of "P & H" Log Construction

"P & H" HOUSES OF REAL LOGS—TRUE PIONEER TYPE

The widespread and growing interest in Real Log Houses has opened up a new field for architectural services. An individually planned Real Log House . . . combining the rustic charm and rugged simplicity of Early American woodcraft with today's standards of convenience, comfort and beauty . . . has long been the dream of thousands. This longing is now being satisfied, in all sections of the country, with the co-operation of architects in utilizing "P & H" log construction technique and "P & H" complete supply service.

Adaptable to Varied Needs and Ideas

"P & H" Real Log construction is readily adapted to a wide range of uses and needs—from small cabin to pretentious lodge—for comfortable year-round homes or delightful vacation retreats. Surprisingly practical for either permanent or seasonal residence—easy and economical to heat; delightfully cool in summer; low maintenance cost.

Readily Combined with Other Materials — With stone, brick, shingles, siding or other building materials for interesting architectural effects.

Properly Seasoned Logs

Meeting the requirements of architect's individual plans and specifications, "P & H" Service supplies properly seasoned Western Red Cedar logs accurately cut, fitted and numbered at the mill, millwork and built-in features ready to set in place . . . and any or all other materials required for a complete house.

All "P & H" logs are seasoned for at least two years . . . a basic requirement for successful log house construction. This is just one of many "P & H" features which assure the client in advance of complete and lasting satisfaction.

Erection under architect's own supervision or, if desired, PAGE AND HILL CO. can furnish a skilled supervisor or do the complete job of construction on the client's building site.

Distinctive "P & H" Structural Features

The distinctive and exclusive "P & H" construction was soundly developed to conform with modern building standards. It assures a strong, weathertight structure; it employs to best advantage the inherent qualities of seasoned Western Red Cedar logs—exceptional insulating efficiency and long life. Its features are readily adaptable to individual plans and to combination with other building materials.

The groove and spline construction makes an effective, permanently weathertight joint.

The patented interlocking corner construction makes a strong, rigid, insulated joint.

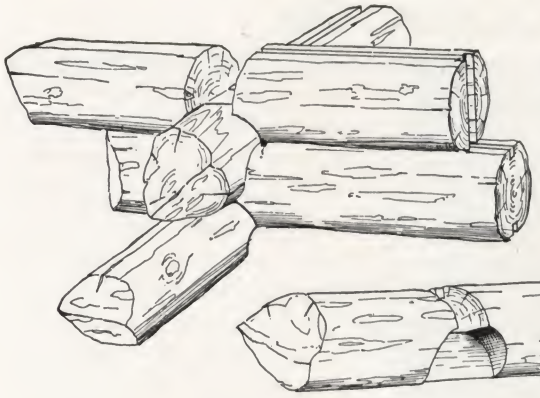
Window and door frames of Western Red Cedar are fitted snugly by grooving and splining into the ends of logs, and at top and bottom of frames, making a strong weathertight construction.

The above structural features and others shown in details on next page.

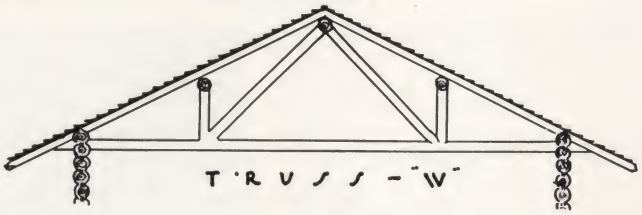
Confidential Service to Architects

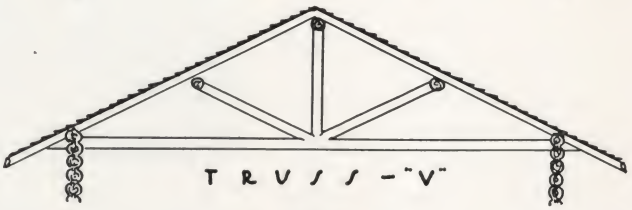
"P & H" log construction and supply service simplifies the planning and erection of log houses, facilitates the handling of such jobs in the architect's office and protects his reputation and responsibility for the dependability of the completed job.

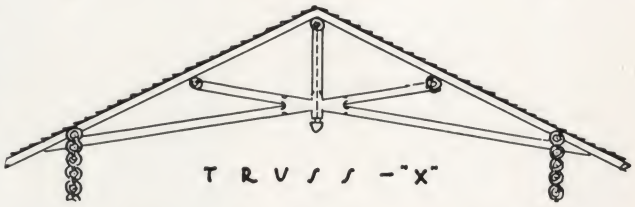
Full co-operation in the preparation of plans in your office. Interesting and approved structural features which may be readily incorporated in your plans. A folio showing completed jobs is available for your use.

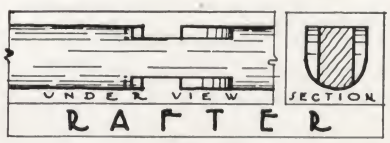


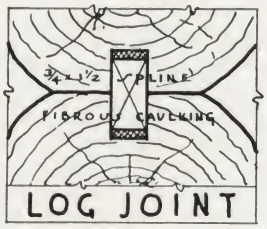
Illustrating P & H Interlocking Corner, and Groove and Spline Construction

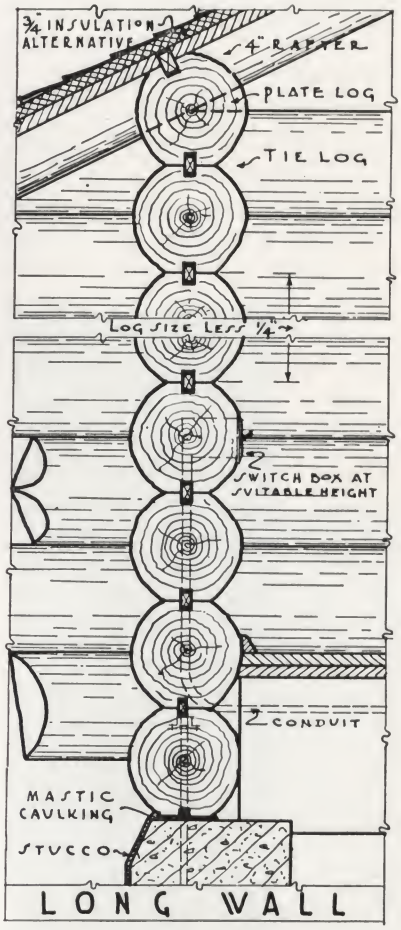


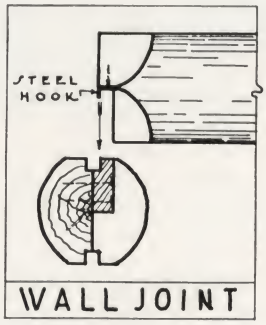


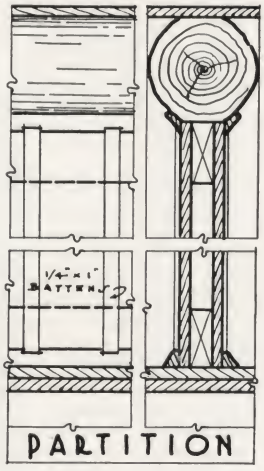


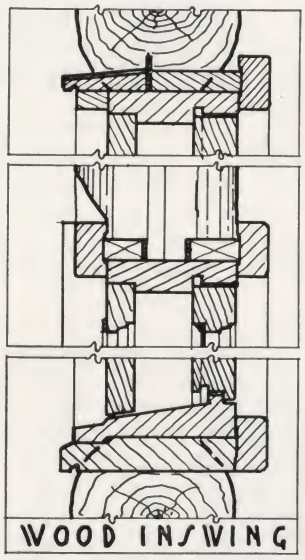


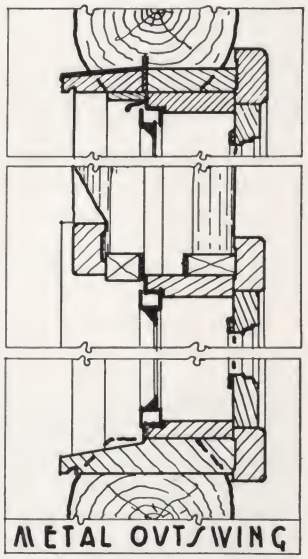


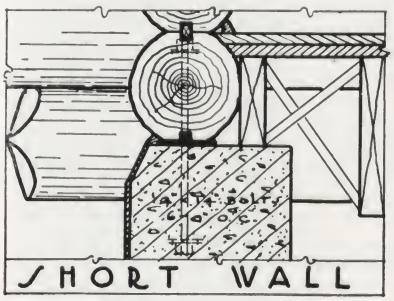


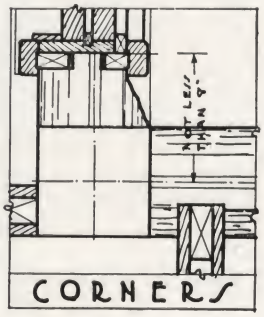


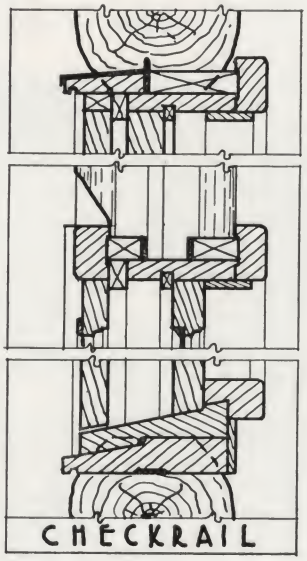


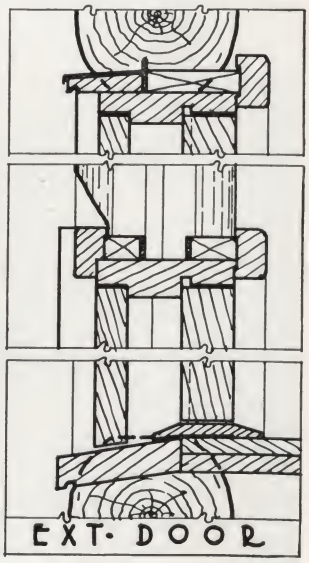












PENROD, JURDEN & CLARK CO.

Manufacturers of American Walnut Lumber and Veneers, and Importers of Foreign Cabinet Woods

GENERAL OFFICES
KANSAS CITY, MO.

MILLS AND PLANT OPERATIONS
KANSAS CITY, MO., DES MOINES, IOWA, CINCINNATI, OHIO AND NORFOLK, VA.

SALES OFFICES
KANSAS CITY, MO., Sheffield Station—American Walnut Lumber and Veneer
CINCINNATI, OHIO, St. Bernard—Fancy Veneer and Lumber, Domestic and Foreign
CHICAGO, ILL., 666 Lake Shore Drive, Telephone Superior 4100
NEW YORK, N. Y., 797 East 135th Street, Telephone Melrose 5-8820

THE COMPANY AND ITS FACILITIES

Almost half a century of specializing in cabinet woods, both in lumber and veneer, has resulted in our accumulating a fund of unusual information. This knowledge, hard won through experience, enables us, as producers, to insure you, as an architect, unusual surface effects. These facts guide our manufacturing procedure, built up over a long period.

Stands for Quality and Service

They are important, since every species of cabinet wood has some characteristic definitely its own. These distinct traits and their variations must be intimately known to us. If we ignore these peculiarities, faulty veneer will be the result, which would mar the effect your design had anticipated.

For instance, in the production of Walnut lumber and veneer it has been proved that certain districts produce better types of Walnut logs than others, just as in some regions wheat, corn, fruit, etc., flourish better than elsewhere. The soil and climate both play important parts in the growth of either a plant or a tree.

We know this from experience, and as a result, when we cut Walnut, we cut only the finest Walnut timber—that type grown in the districts surrounding our Kansas City and Des Moines mills. When we select the logs for the hundred other species of cabinet woods that we produce, we are also careful to secure our logs from those areas where Nature has been most generous.

Special Plant and Salesroom Services for Architects

You are cordially invited to visit our showrooms, where personal service is available to the architect. In Cincinnati we are especially equipped to show samples and matched and finished panels to the architect interested in either native or foreign fancy woods. In, or readily accessible to, the leading cities of the country our Sales Offices offer opportunities to see and select from the finest foreign and domestic cabinet woods.

Left:

Office of the President
The Maytag Company
JOHN R. FUGARD, Architect
SCHICK-JOHNSON COMPANY, Woodwork
ALGOMA PLYWOOD AND VENEER CO., Panels

American Walnut Lumber and Veneers

We manufacture and maintain complete and diversified stocks of Walnut lumber and veneers of the highest quality. Plant facilities are large and modern, plant personnel highly trained, and all manufacturing and marketing operations under the supervision of recognized experts. The Company has grown to recognition as the largest manufacturer of American Walnut as the result of fifty years' experience in that field.

We are in position to satisfy both the normal and the most exacting requirements of the architect for lumber for interior trim, flooring, and other solid woodwork. In American Walnut veneers we carry very large stocks of plain and figured rotary, half-round, sliced and quartered longwood, stumpwood, burls and crotches—all in a great variety of beautiful figure effects and in various colors and shades, and all carefully manufactured from the very choicest material.

In our products of American Walnut, as in our imported Walnuts and foreign fancy woods, you will find a wealth of woods whose unusual grain and markings stimulate new and handsome effects in creative design. Many of the country's finest cabinet work installations have drawn upon this source. So too have numberless small installations—a field which we are eager to serve, and to which we at all times give the most careful attention.

Right:

Section of the Paneled Wall of an Executive Office
Figured Walnut, cathedral match

A WIDE VARIETY OF CHOICE FOREIGN WOODS

A glance at the list of foreign woods below will probably show many names with which the architect is relatively unfamiliar. Yet each of these has distinctive qualities and beautiful colors, markings and figures which make them most appropriate for adaptation to all types of design, traditional or modern.

With its long experience in foreign woods, the PENROD, JURDEN & CLARK Co. has become an authority on the various species and their most suitable uses for furniture and interior decoration. This experience is at the service of the architect and his staff, to enable them to make the most appropriate uses of these unusual veneers.

The company has published a series of bulletins in which these woods have been described and illustrated. These will be furnished the architect on request. Where these do not supply the information desired, we will welcome specific questions as to markings, color and uses.

Checking Incoming Logs from the Orient

In foreign woods, activities of the PENROD, JURDEN & Co. span the globe. No field is left unexplored, no expense or trouble spared, in the effort to secure fine trees notable for size, and for beauty, distinction, and rarity of figure.

Working through our own representatives in Europe, Australia and the Far East, rarely through middlemen, we buy choice trees where they grow, after personal examination. Logs move directly from the virgin forest to our tidewater plant at Norfolk, Virginia, with freight and handling charges reduced to the minimum.

Stocks of veneers of choice foreign woods are fresh and complete at all times, and prompt attention to orders is a feature of our service.

A GUIDE TO OUR HUGE STOCKS OF FOREIGN WOODS

Very Light

Ash . . Aspen . . Avodire . . Ayous . . Bella Rosa . . Finnish Birch . . Harewood . . Maple . . Prima Vera. Holly.

Light

Allacede . . Framire . . Greywood . . Kambala . . Lovea . . Movingui . . Narra . . American and Russian Oak . . Pearwood . . Burma Padauk . . East Indian Satinwood . . Sycamore . . Tamo . . Zebrano. Almon.

Brown

Macassar Ebony . . Goncalo Alves . . Imbuya . . Koa . . Indian Laurel . . Laurack . . English Brown Oak Orientalwood . . Paldao . . Teak . . Circassian, English, French and Italian Walnut . . Black Bean, Imbuya, Tabasara, Kelobra.

Black

Gaboon and Kribi Ebony.

Pinkish-Red

Bosse . . Bubinga . . Cherry . . African and Cuban Mahogany . . Australian Silky Oak . . African and Andaman Padauk . . Brazilian, East Indian and Madagascar Rosewood . . Sapeli . . Tulipwood.

Burls

Ash . . French Elm . . Maidhu . . Maple . . Madrone . . Olive . . Myrtle . . Poplar . . Redwood . . Thuya . . Circassian and French Walnut.

Crotches

Avodire . . Mahogany . . Brazilian Rosewood . . Circassian and French Walnut.

Stumpwood

Ash . . Maple . . French, Circassian and Turkish Walnut.

Swirls

Ash . . Mahogany . . Oak.

Kelobra Moon Swirl

Avodire Crotch, Feather and Moon

SOUTHERN HARDWOOD PRODUCERS, INC.

805 Sterick Building
MEMPHIS, TENN.

AN ASSOCIATION OF SOUTHERN HARDWOOD LUMBER MANUFACTURERS

The Products

Twenty different kinds of Southern hardwoods are available in many forms; rough, air dried, kiln dried and surfaced lumber; dimension stock; interior trim; flooring; paneling; and plywood.

20 Southern Hardwood Species

Ash	Gum (black)	Oak (red)
Basswood	Gum (red)	Oak (white)
Beech	Gum (sap)	Poplar (yellow)
Cottonwood	Hackberry	Pecan
Cypress (yellow) softwood	Hickory	Sycamore
Elm (soft)	Magnolia	Tupelo
	Maple (soft)	Willow

Ample quantities of these woods are available through dealers and the supply is backed by the largest hardwood area in the world. The South has 80 million acres of hardwood forest lands which are growing an inexhaustible supply of hardwoods for present and future consumption. More than 50 per cent of the hardwoods used are Southern hardwoods. SOUTHERN HARDWOOD PRODUCERS, INC., will gladly assist buyers in locating a nearby distributor of any Southern hardwood. The South, with a reserve of 20 billion feet of red and sap gum, is the sole source of this hardwood as well as the only source of magnolia, black gum, pecan, tupelo, and willow. The South produces more than 50 per cent of the white and red oak and has a standing growing reserve of more than 40 billion feet of these woods. It also has large quantities of beech, soft elm, hickory, soft maple, yellow poplar, sycamore, ash, and basswood.

Interior Trim

The 20 species of Southern hardwoods provide a selection of hardwoods suitable for every interior use. Natural finish woodwork species are white and red oak, red gum (plain, quartered or figured), ash, elm, black gum, magnolia, maple, pecan, sycamore, and willow. Painted or enameled trim species are gum (red and sap), black gum, magnolia, poplar, basswood, tupelo and willow.

Wall Board Paneling; Random Width "Character-Marked" Southern Oak. Natural Finish

Corner of Dining Room; Clear Southern Oak Wall Paneling Trimmed in Darker Southern Hardwood. Magnolia Venetian Blind and Southern Hardwood Plywood Ceiling. Natural Finish

Southern Hardwood Wall Boards

The use of random width and uniform width wall boards in clear or "character-marked" lumber for wall surfaces is extending rapidly. Southern hardwoods because of the many species, varied grain effects, colors, and textures are being employed extensively for wall boards. Many different natural wood effects are obtained in Southern hardwoods having pronounced grain patterns. The smooth, hard, surfaces of the gums, magnolia, and poplar, provide a base for paint and enamel that results in a finish without waves or grain markings.

Southern Hardwood Flooring

The South manufactures 65% of the red and white oak flooring sold in the United States. Southern oak flooring combines superior wearing qualities and beauty; takes a high polish and its up-keep is negligible. Southern beech flooring, manufactured under NOFMA standards, provides a durable floor for stores, factories, offices, gymnasiums, ballrooms, schools, and other buildings where floors must withstand hard usage. The natural beauty of the wood makes it appropriate for an expanding use in beautifying home interiors. The cost is moderate. Other hardwood species made into flooring are pecan, red and sap gum, black gum, tupelo and maple. Write SOUTHERN HARDWOOD PRODUCERS, INC. for particulars.

Veneers and Plywood

Veneers in red gum are used in the form of plywood or on solid corewood, and are obtainable in sliced or sawed veneers, as figured red gum, ribbon stripe, or plain; in rotary cut, as plain or unselected red gum. White and red oak veneers and plywood are manufactured in plain, quartered, and rotary cut. Magnolia, sap gum, black gum, tupelo, yellow poplar, and cottonwood veneers are used extensively for painted or enameled work. These diffuse porous hardwoods, with little or no figure, present a smooth, hard surface capable of taking and holding enamel. Quartered sycamore makes an attractive panel in veneers. Blond effects in modern trim and furniture are easily obtained in magnolia, tupelo, soft maple, beech, sap gum, and black gum.

Mouldings, Lineal and Package Trim

Southern hardwoods are made up at the mills in mouldings, lineal and package trim. For information as to dealers or sources of supply, write to SOUTHERN HARDWOOD PRODUCERS, INC.

About Quality in Hardwoods

"Geography, or locality of growth, is commonly held by consumers (and the idea is given encouragement by producers) as having an important effect on quality. Local growth conditions do have a marked effect on quality but geography in itself is a poor index of growth conditions and the Forest Products Laboratory, in its years of testing and research, is inclined to minimize the importance of reliability or adhering strongly to state or regional distinctions."

For example, oak from any section of the country can be had, either fine grained or with a larger grain pattern, plain or quarter sawed. Individual trees vary in their growth rates, and the ultimate patterns found in lumber are determined by the tree from which the boards came. For some purposes wood of rapid growth is more desirable than wood of slow growth.

Specifications Writing for Southern Hardwoods

In Southern hardwoods, species and the kind of sawing are more important in obtaining the desired results than the naming of grades. White and red oak, red and sap gum, sycamore, black gum, and tupelo, are both plain sawed and quarter sawed, and consequently different characteristics and different grain patterns prevail within each species.

The word *"Southern"* as a prefix to all the species listed on the opposite page is your assurance of securing the genuine Southern hardwoods. Use it freely in all your hardwood specifications.

Literature

The Southern Hardwood Information Series containing information on the nature, characteristics, availability and uses of the several Southern hardwoods, consist of five bulletins to date:

Bulletin No. 1. "Red and Sap Gum"
Bulletin No. 2. "Oak from Southern Hardwood Forests"
Bulletin No. 3. "Southern Hardwood Interiors"
Bulletin No. 4. "Tupelo and Black Gum"
Bulletin No. 5. "Southern Oak for Paneling and Interior Trim"

These bulletins will be sent free to established architectural firms and contractors on request. Additional bulletins on other species of Southern hardwoods and their uses will be published at later dates.

SOUTHERN HARDWOOD USE CHART FOR ARCHITECTS AND BUILDERS

Species	Distinguishing Features	Architectural and Other Uses	Finishes
ASH (White)	A hardwood offering a combination of comparative lightness in weight, together with great strength and toughness. It bends well, has a prominent grain, and is very light in color. Available in two textures—"cabinet" ash, and "firm or better."	Interior finish, furniture, automobile bodies, tool handles, refrigerators, etc.	Natural or stained
BASSWOOD	A hardwood of extremely soft texture and light weight. It is nearly white, and like all hardwoods contains no resin, therefore it makes excellent drawing boards. Does not warp, remains flat, glues unusually well, and is one of the easiest woods to work.	Interior finish, paneling, furniture, drawing boards, venetian blinds	Paint, enamel Lacquer
BEECH	A smooth, hard, long wearing wood, having excellent qualities for flooring. Contains numerous distinct flakes in quartersawn lumber, but is seldom quartered. Heartwood is an attractive red color, sapwood pale flesh. Both have a faintly visible grain.	Flooring, interior finish, furniture, handles, woodenware, food containers, wooden letters	Natural or stained, paint or enamel
COTTONWOOD	This is one of the lightest and softest of all the hardwood species. Its color is nearly white, and it has a very faint growth ring. Cut from large trees. Few defects.	Paneling in the form of plywood, furniture, egg cases, crates	Paint or enamel
CYPRESS (Yellow) (Softwood)	This is a softwood (or comfer), but is graded under hardwood rules. Heartwood reddish-brown. Decay resistant. Sapwood yellow. Prominent grain markings. Works easily. Pecky grades present antique appearance and used extensively for paneling.	Interior and exterior finish, beams, siding, sheathing, dimension, boats, tanks, greenhouses, general utility	Paint or natural.
ELM (Soft)	An attractive brown wood, medium in texture and weight. Has excellent bending properties. Sapwood is pale, a little lighter than the heartwood. Soft elm works easily and is very economical wood to use. Its prominent grain is accentuated by staining.	Furniture, interior finish, and bentwood products	Natural or stained
GUM (Red)	This lumber is the heartwood of the Red gum tree. One of America's premier woods for beautiful interior trim. Color is a rich reddish-brown. Sold as "unselected" and "figured" in both plain and quartersawn lumber. Has an excellent, soft, fine, texture.	Interior finish, paneling in figured, striped, or rotary cut veneers, flooring, beams and furniture	Natural or stained. Sometimes enameled.
GUM (Sap)	This lumber is the sapwood of the red gum tree. Its texture, working qualities, and other properties are like red gum, except that the color is a light fleshy pink to light brownish gray. Among the finest of all woods for smooth, satiny, enamel finishes.	Quartered sap gum for interior trim, veneered paneling, furniture, and built-in book shelves, cabinets, etc.	Paint or enamel. Sometimes stained
HACKBERRY	A medium textured ring porous hardwood, having a prominent, attractive, grain which is beautifully brought out by staining. An unusual hardwood of great possibilities.	Interior finish, furniture, wall paneling, cabinet work, fixtures	Natural or stained
HICKORY	A very hard, tough, elastic, wood. Wears well and stands severe abuse. The red heartwood has strength properties exactly equal to the white sapwood. Excellent for bending.	Interior finish (antique effect with "bird-pecked" hickory)	Natural or stained
MAGNOLIA	A medium hard wood having a smooth, fine texture. Color is a greenish yellow with an occasional dark streak or burl in the lower grades. Magnolia works easily and is an excellent wood for natural blond finishes. Excellent for Venetian blind slats.	Interior finish, Paneling, Venetian blinds, built-in cabinets, furniture, kitchen units	Paint or enamel, natural or bleached
MAPLE (Soft)	A smooth, medium textured, light colored hardwood. The sapwood is white and heartwood pale reddish-brown, sometimes containing brown streaks. Quartered maple has prominent flakes up to ⅛ in. in height. Soft maple is not difficult to work.	Interior finish, flooring, furniture, cabinets, etc.	Natural or stained, sometimes enameled
OAK (White)	Oak is one of the most widely used woods in the world. It has a medium to firm texture, brownish heartwood, nearly white sapwood. Quartered white oak and red oak both have a very prominent flake (or medullary ray) brought out in quarter sawing.	Interior & exterior finish, wall paneling, mouldings, furniture, flooring, stair risers, treads, veneers	Natural or stained
OAK (Red)	Red oak is similar to white oak. Red oak grain is slightly more obvious and the color, generally more red than brown. The wood is used in a similar manner to white. oak but is not quite as strong. The grain is more open than in white oak.	Uses for red oak include all those above, and many others, too numerous for this space	Natural or stained
POPLAR (Yellow)	A medium textured, light weight wood. Works easily. Takes a superior enamel finish. The sapwood is practically white, heartwood yellowish green. Yellow poplar is one of the largest hardwood trees in the world. Lumber is wide, easily cut. Retains shape.	Interior finish, paneling, built-in cabinets, corewood in furniture, bookshelves, mantels, wainscoting	Paint or enamel
PECAN	A very hard wood with a beautiful figure. Heartwood is a rich reddish-brown. Characterized by frequent dark streaks which accentuate its beauty. Sapwood is light. Pecan is unsurpassed in wearing qualities and takes stains or natural finishes equally well.	Interior finish, furniture, (especially adaptable to school furniture) flooring, and wall paneling	Natural or stained
SYCAMORE	An attractive, flesh colored wood, having a fine grain, medium texture and interesting figure. Quartered sycamore reveals numerous pronounced flakes up to ¼ in. in height. Growth ring is faintly visible. Most sycamore is quartersawn. It is one of the prettiest.	Interior finish. Quartered wood is extremely modernistic, paneling, trim, furniture, veneers & plywood	Natural or stained
TUPELO and BLACK GUM	These woods are combined here because of their similarity. Both are fine, medium textured woods having an interlocked grain, which means that they split only with difficulty. Quartered black gum has a beautiful ribbon stripe figure. Color of heartwood is pale to moderately dark brownish gray. Sapwood white, made into plywood & veneers.	Interior finish, factory flooring, planking for loading docks, furniture, veneers for paneling, bars, fixtures, and many industrial uses	Paint, enamel, stained, or natural
WILLOW	A very light, soft textured hardwood, having a beautiful, pale reddish-brown heartwood with light tan sapwood. Very easy to work, stays in place. Makes excellent panel.	Interior finish, built-in cabinets, furniture and wall paneling	Natural, stained or painted

For detailed information about any Southern hardwood write to Southern Hardwood Producers, Inc.
805 Sterick Building, Memphis, Tenn.

TRIMPAK CORPORATION

Manufacturers of Packaged Interior Wood Trim

44 Whitehall Street
NEW YORK, N. Y.

What Is TrimPaK?

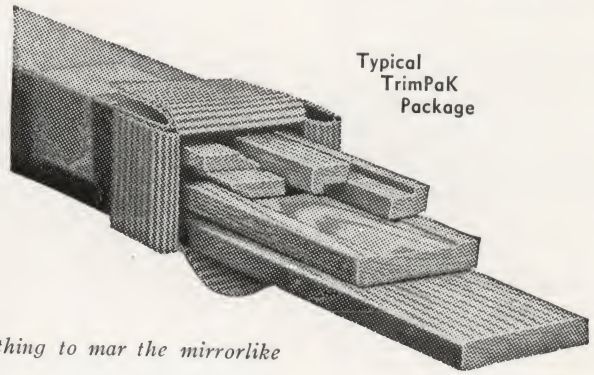
TrimPaK is interior trim which has been smoothly machine sanded, cut to approximate length and then packed in cartons made of jute board which keep the stock clean and fresh until it is desired for erection on the job.

TRIMPAK TRADE MARK REG. U.S. PAT. OFF. *Highest Grade* INTERIOR FINISH

Before TrimPaK was made available, interior trim was sold out of the lumber yard in long pieces which had to be cut on the job to fit the door and window openings. It was inevitable that in the handling of this material it would become soiled and marred. As a general rule, it left the mill bright and clean, but enroute—perhaps a thousand miles or more from the mill—dust and cinders sifted into the railroad car. After it arrived at the lumber yard and was placed in stock, perhaps months would elapse before it was sent out to the job, and here again opportunity was afforded for the stock to become soiled. Then, after it was delivered to the job, it might be left unused for a number of days, accumulating more grime and finger prints. In this situation, we have TrimPaK's *Basic Idea* No. One.

TrimPaK is the answer—no matter how long it has been away from the mill where it was manufactured, it comes to the job clean and bright, ready for use and in condition to contribute measurably to a beautiful home.

The care used in packing TrimPaK is exemplified in this statement: *The men who pack it at the mill use red flannel cloths to wipe off every speck of sawdust or dirt so that there will be nothing to mar the mirrorlike smoothness of the sanded surfaces.*



Typical TrimPaK Package

TrimPaK Eliminates Waste

As compared with ordinary construction lumber, good trim is too costly to waste. Broken pieces, warped and crooked pieces, tag ends too short to use, etc. all run up the cost of trim without contributing value.

TrimPaK takes care of this problem of waste. (*Basic Idea* No. 2.) Every piece is cut to approximate length with just enough extra length to permit the carpenter to make a good joint. In most instances, only one cut on each piece is required, the other end having been cut square on the high speed precision machinery at the TrimPaK mills.

When you buy TrimPaK, you get *just enough trim to do the job—no more and no less.*

If there are twenty openings to trim, the dealer delivers forty packages of TrimPaK, because it takes two packages for each window and door. The horizontal pieces are in one package; the vertical pieces in another. Each package is clearly labeled so that the carpenter knows before he opens the package what size opening it is made for. *Basic Idea* No. 3 is saving of labor cost.

There is Inherent Quality in TrimPaK

Only the *cream of the log* goes into TrimPaK. (*Basic Idea* No. 4). In TrimPaK, you get clear lumber—and when we use this term we are fully aware that Webster defines "clear" as "free from all that dims, blurs, or obscures; free from all defects; clean."

TrimPaK is Scientifically Seasoned

When TrimPaK is selected you are assured of getting trim seasoned the scientific way—in modern, automatically controlled steam dry-kilns. This method produces lumber which is seasoned thoroughly and uniformly. (*Basic Idea* No. 5). All the shrinkage has occurred before the lumber is manufactured into the finished product—and then the tight cartons in which TrimPaK is packed prevent the absorption of moisture from the air in the time which may intervene between manufacture and delivery on the job.

TrimPaK Takes a Beautiful Finish

Because it is manufactured properly and thoroughly seasoned, TrimPaK takes and retains paint and varnish perfectly. It provides a perfect base for the art of the decorator. In each species of woods in which it is manufactured, TrimPaK is the *cream of the log—"the Ultimate in Trim."*

TRIMPAK OFFERS A WIDE CHOICE OF WOODS

In hardwoods, it may be secured in:

Birch
Red Gum
Black Gum
Sap Gum
Red Oak
White Oak
Chestnut
Maple.
Basswood
Mahogany
Soft Yellow Poplar

In softwoods:

Arkansas Soft Pine
Idaho White Pine
Ponderosa Pine
Genuine Red Cypress
Old Growth Douglas Fir

TRIMPAK NARROW LINE TRIM

Narrow Line Trim
Full mitred corners accurately cut with patented solid wood spline on vertical casings, with groove to receive splines in head casing. Easily put together.

Model "A" **Two Popular Styles of TrimPaK Narrow Line Window Trim** Model "B"

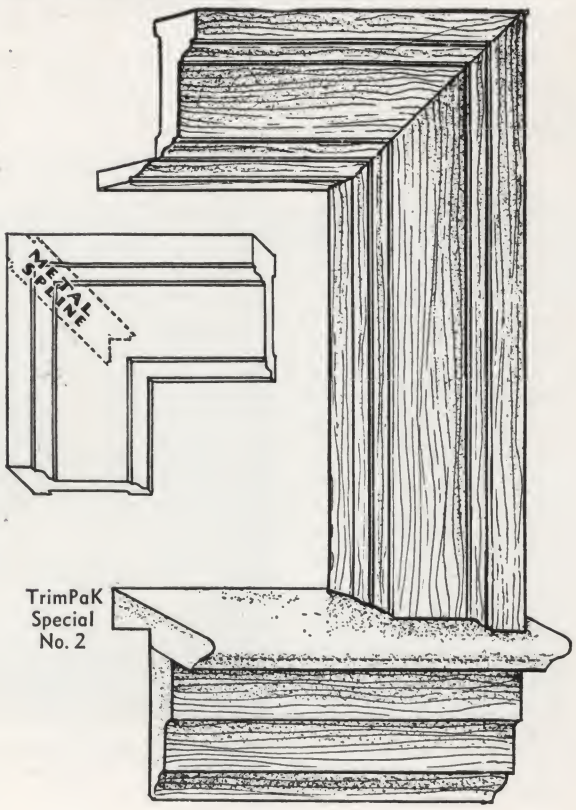
The illustrations on this page will give the architect and contractor a clear idea of the fine lines and carefully studied mouldings of TrimPaK. Simplicity is the keynote in every TrimPaK style. Intricate patterns are difficult to keep clean and are out of harmony with prevailing styles of architecture. There is sufficient variety in the standard designs of TrimPaK to permit individuality.

Attention is called to the patented solid wood spline on the vertical casings shown at the top of this page. In the head casing is a carefully cut groove to receive the spline. This makes for easy assembly and non-warping construction.

TRIMPAK SPECIAL No. 2

The Special No. 2 window trim shown on the right is one of the most popular TrimPaK products. The mitres are accurately cut and kerfed to receive the metal locking spline described below. Stools and aprons have ends returned.

Positive Locked Joints—Special attention is called to the metal spline shown in the line drawing. This spline assures an absolutely tight joint at the mitred corners and is a typical TrimPaK development. A mitre clamp and spline driver are supplied to the contractor to assure accuracy in erection and a perfect joint with a minimum of labor.



TrimPaK Special No. 2

WESTERN PINE ASSOCIATION

Soft Textured Pine Lumber, Lath and Woodwork

Yeon Building, PORTLAND, OREGON

MEMBERS' SALES OFFICES, JOBBERS AND DEALERS IN PRINCIPAL CITIES

Products

PONDEROSA PINE LUMBER
IDAHO (Genuine) WHITE PINE
SUGAR (Genuine White) PINE

For exterior and interior finish, mouldings, siding, house framing, boards, window frames, sash, doors, porch columns, paneling, stair and cabinet work.

Also Larch, Douglas Fir, White Fir, Red Cedar, Incense Cedar and Engelmann Spruce.

Sold Throughout the United States

Western soft textured Pines are available in all sections of the United States in the form of yard lumber and fabricated building products. They can be procured from retail lumber yards, planing mills, jobbers and sash and door manufacturers.

Supply

Adequate lumber is on hand at all times at distributing points and mill storage yards to take care of building needs in Western Pines. Bureau of Census figures show actual annual production of Ponderosa Pine has totaled about 3,000,000,000 feet, Idaho White Pine 525,000,000 feet and Sugar Pine 300,000,000 feet. Each wood is backed by large reserves of old growth timber which, with the new growth that is added each year, insure a continuing production of lumber; in fact, no other woods of commercial importance promise as permanent a natural supply.

Association Membership and Services

One hundred fifty Pine manufacturers, located in Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Washington, Wyoming and British Columbia, having common manufacturing problems and timber species, have associated themselves together to promote efficiency in manufacturing, uniform grading and the dissemination of information which will assist architects, builders, fabricators, dealers and consumers in all matters relating to the proper use of the woods listed above.

Lumber sales are handled by the individual member mills and their agents throughout the nation. However, the WESTERN PINE ASSOCIATION will gladly assist buyers in locating a nearby distributor of these woods.

Grades, Sizes and Seasoning

The lumber produced by these Association mills is uniformly graded in accordance with published rules of the WESTERN PINE ASSOCIATION and is furnished in sizes which are in close conformity to American Lumber Standards. The mills employ expert graders of certified ability. Their work is checked currently by experienced lumber inspectors of the Association, thus assuring to purchasers of these woods, lumber of uniform manufacture and quality. The Pine species are segregated into three grades of finish and five grades of boards, permitting a wide choice of material, each grade of which is restricted to relatively narrow limits of quality variation. The stock is carefully seasoned in the air or in dry kilns, is surfaced to uniform sizes *after* seasoning, and from the moment it is shipped from the mills is fitted for use in building.

Good Design Made. Permanent through the Use of Western Pines for All the Woodwork in This Modern Monterey Home
WM. J. BAIN, Architect

Trade and Grademarked Lumber

Specifiers of lumber can protect their clients against substitution by including in the specifications the requirement that all stock which is purchased shall be marked with (1) the symbol of the Association under whose rules it is graded, (2) the manufacturer's mark, (3) the Association grade name and (4) the species mark. These elements are included in the typical mark used by Western Pine Association mills, when stock is so ordered. See illustration above.

Specification Writing

Care should be taken in writing specifications for lumber to have them conform to the grade names and species names used by manufacturers of these products. When special stock is required, the quality and kind that is wanted should be clearly described. If special patterns are called for, detailed drawings should be furnished the shipper. The WESTERN PINE ASSOCIATION will send to established architectural firms and contractors, upon request and without charge, booklets about its species. In these publications, information is given about the properties, uses and grades of each wood, including photographs of the standard grades. When writing, please state the species on which the information is wanted.

Ponderosa Pine—(Pinus ponderosa)

Physical Properties and Appearance—The physical properties of Ponderosa Pine and the uses to which it is commonly put align it with the White Pines. It is produced in large commercial quantities in most states west of the Rocky Mountains. The wood is distinguished by its light color, soft, even texture and good working qualities. The grain of the wood is only slightly discernible, the wood nails easily without splitting, takes and holds paint well, is light in weight, and has all of the qualities required of a wood suitable for high quality finishing uses.

Uses and Characteristics—A comparatively large proportion of the log is sawed into factory lumber. For more than thirty years, Ponderosa Pine has been the leading wood for sash, doors, frames and screens, and through all these years it has served these uses satisfactorily. It is, therefore, not a new or untried material, neither is it one that has been found lacking in the essential requirements of the service.

Another important use of Ponderosa Pine is for mouldings. Its soft texture, slight shrinkage and good nailing properties permit the wood, even in very small sizes, to be worked to intricate patterns with sharp, clean cut edges and contours. It is very satisfactory for all painted and enameled work, and the wood's light color is of special advantage when light tints are to be applied.

Sparkling Freshness, Decoration and Utility Achieved with Western Pines
LESTER G. SCHERER, Architect

Ponderosa Pine is one of few woods used for Knotty Pine paneling. Its satiny sheen, inconspicuous grain and sound, tight, red knots, which surface smoothly, account for its increasing use for paneling. Besides, the wood stains well and its light color blends effectively with the tan and brown tints so frequently selected for this type of work.

The several board grades of Ponderosa Pine are put to many uses, important among which are shelving, drop siding, flooring, partition and concrete forms. Boxes and crates are an important industrial use.

Among rough carpentry items, its use for house framing is rapidly increasing, chiefly due to its light weight, straightness and easy cutting and nailing values.

Ponderosa Pine has a low density cell structure, making the wood an excellent insulating material, and is popular for wall sheathing. The wood is resilient and shows little tendency to warp or shrink under varied climatic conditions.

It is economical to use this wood. For example, hinges and locks can be fitted and attached to Ponderosa Pine doors quickly, thereby lessening labor costs. The doors stay put, wear well, and are easy to operate due to their light weight. Ponderosa sash can be fitted and weatherstripped at low cost. All Ponderosa Pine woodwork is a time-saver for the carpenter because of its easy cutting, shape holding and good nailing qualities. The wood readily fulfills the requirements of most building needs.

Idaho (Genuine) White Pine—(Pinus monticola)

Physical Properties and Appearance—The fact that Idaho White Pine is a genuine White Pine means much to the architect or builder who is familiar with the many fine qualities of White Pine, which wood, for centuries, has been considered the choicest among all softwoods used in building construction.

There are three genuine White Pines of commercial importance in the United States—Northern White Pine (Pinus strobus), Sugar Pine (Pinus lambertiana), and Idaho White Pine (Pinus monticola). So nearly alike are the physical properties of these three woods that expert wood technologists state "there is absolutely no positive means of identifying the three White Pines one from another microscopically."

Idaho White Pine is produced mostly in Idaho, Washington and Montana. It is noted for its very soft, uniform texture, and slight grain. The difference in cell wall thickness between the relatively thinner celled springwood and the thicker summerwood is so slight as to be imperceptible. The wood is distinctly light colored, free from pitch and natural oils which discolor paint, shrinks little, nails easily without splitting, is straight grained, light to handle, and easily worked.

Uses and Characteristics—Idaho White Pine trees are smaller on the average than Sugar Pine and yield a high percentage of small, sound, tight knotted boards the equal of which is seldom found in any wood. The lumber is excellent for insulating purposes because of its strength, good nailing properties and very low density cell structure. White Pine has a good record of resistance to weathering and decay. The number of early New England dwellings that are still in use is proof positive of the wood's value for work exposed to the weather. For cornice and porch work, siding, windows, doors, frames and trim, Idaho White Pine serves every need. On the interior, it is used for the very finest stair work, mantels, cabinet work and enameled finish. When selected for Knotty Pine interior finish, it is without a peer. In fact, Idaho White Pine is a credit to the architect and the builder, wherever it is used.

Sugar Pine (Genuine White Pine)—(Pinus lambertiana)

Physical Properties and Appearance—Sugar Pine, largest of all the pines, is a true White Pine that is native to California and southern Oregon. Its tall, cylindrical trunk, free of branches for some distance from the ground, yields a high percentage of clear lumber. It is not uncommon in this wood for finish and factory lumber to be cut in wide, thick pieces measuring up to as much as 16/4 inches in thickness, many entirely clear in quality. The average Sugar Pine log also produces a large proportion of factory lumber, suitable for manufacturing into window frames, doors, sash, screens and similar fabricated products.

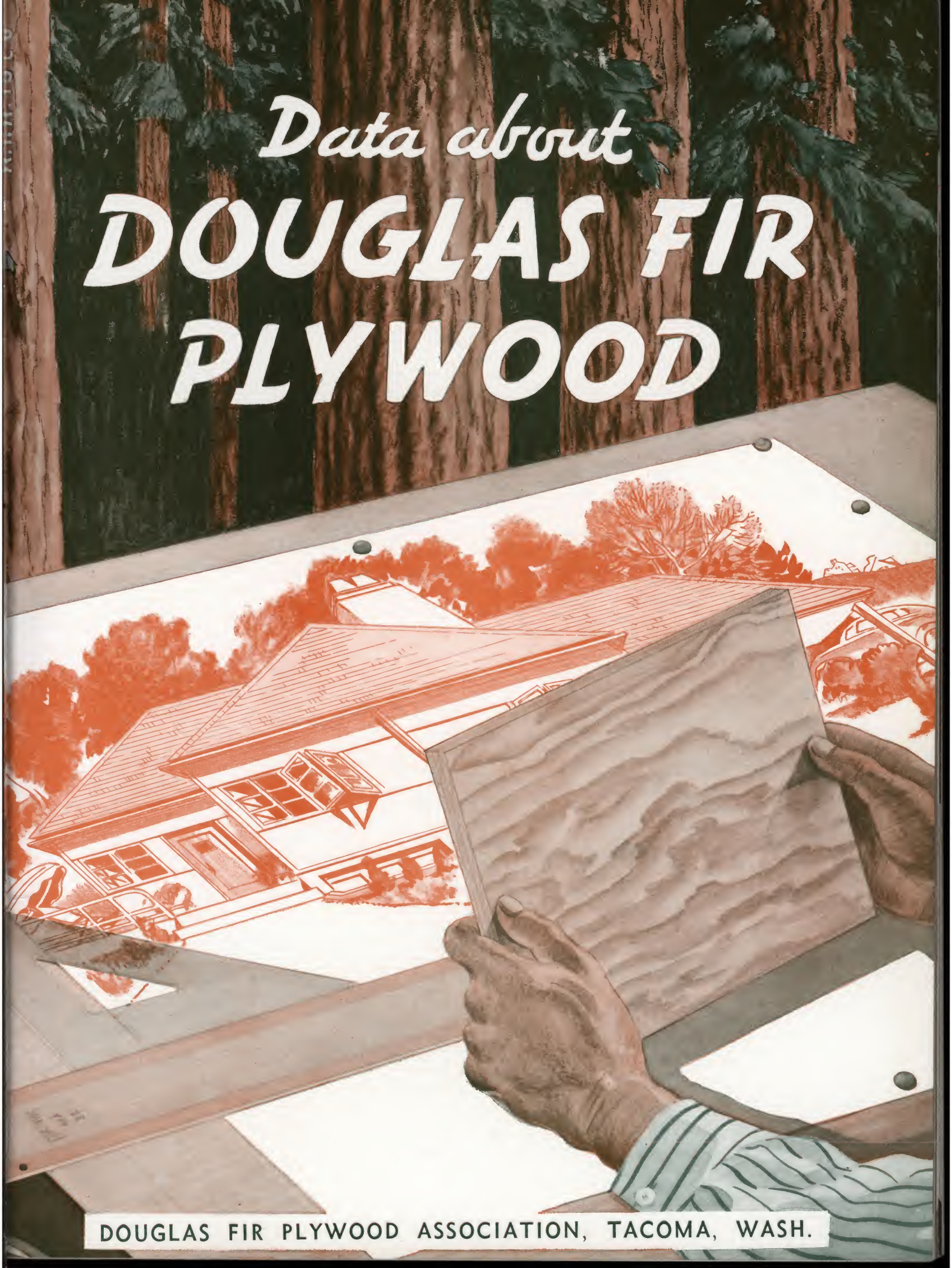
Uses and Characteristics—Sugar Pine is prized for its soft, easy cutting texture, its straight grain, and its shape holding qualities. It is an important species for foundry patterns, one of the most exacting of all uses for wood. Capital decorations, ornamented mouldings, wood carvings, and wood turnings of all sorts are easily and accurately reproduced in this wood. Furthermore, Sugar Pine shows no tendency to split in nailing and is quickly installed by the carpenter. It resists weathering and decay, and has proven beyond question, through years of service under varying climatic conditions, its superior qualities for all exterior work, as for porch and cornice work, shutters, columns, mouldings, balusters, siding, porch floors and ceiling. Sugar Pine absorbs paint evenly and holds it without the paint film peeling or becoming wavy from raised grain. The good painting qualities of the wood are attributed largely to its soft texture, light color, slight shrinkage and freedom from resinous substances and oils which discolor paint or cause it to peel. For the same reasons, Sugar Pine is an excellent wood for the very best interior enameled work. On even the most difficult design or assembly jobs, the wood can be used with confidence that it will measure up to the requirements of the use.

Literature and Installations

The WESTERN PINE ASSOCIATION, Yeon Building, Portland, Oregon, maintains a research laboratory and will assist architects and builders on any problems concerning the use of its products. It will supply samples and literature on request. Also, representative installations where Ponderosa Pine, Idaho White Pine and Sugar Pine products have been successfully used will be cited, upon request.

The Knotty Pine Walls and Woodwork Lend Informality and Friendliness to This Attractive Party Room
J. E. DOLENA, Architect

Data about DOUGLAS FIR PLYWOOD



DOUGLAS FIR PLYWOOD ASSOCIATION, TACOMA, WASH.

DOUGLAS FIR PLYWOOD ASSOCIATION

Tacoma Bldg., Tacoma, Wash.

» THE ASSOCIATION «

A non-profit organization of United States manufacturers of Douglas fir plywood, founded to sponsor a continuing program of technical research, to promote the use of this material in construction and industry, and to help users employ it to the best advantage.

Inquiries as to the characteristics or uses of Douglas fir plywood will receive prompt attention. Address DOUGLAS FIR PLYWOOD ASSOCIATION, Tacoma Bldg., Tacoma, Wash., or any of the following industry mills:

ABERDEEN PLYWOOD COMPANY
Aberdeen, Washington

BUFFELEN LUMBER & MFG. CO.
Tacoma, Washington

CAPITOL PLYWOOD CO.
Olympia, Washington

ELLIOTT BAY MILL COMPANY
Seattle, Washington

HARBOR PLYWOOD CORPORATION
Hoquiam, Washington

M & M PLYWOOD CORPORATION
Portland, Oregon

NORTHWEST DOOR CO.
Tacoma, Washington

OLYMPIA VENEER COMPANY, INC.
Olympia, Washington

OREGON-WASHINGTON PLYWOOD CO.
Tacoma, Washington

THE PLYLOCK CORPORATION
Portland, Oregon

ROBINSON MANUFACTURING CO.
Everett, Washington

SMITH WOOD-PRODUCTS, INC.
Portland, Oregon

UNITED STATES PLYWOOD CORPORATION
Seattle, Washington

VANCOUVER PLYWOOD & VENEER CO.
Vancouver, Washington

WASHINGTON VENEER COMPANY
Olympia, Washington

WEST COAST PLYWOOD CO.
Aberdeen, Washington

WHEELER OSGOOD SALES CORPORATION
Tacoma, Washington

» THE PRODUCT «

Douglas fir plywood consists of an odd number of thin sheets, or veneers, of selected old growth Douglas fir—3, 5, or 7 in. standard thicknesses—these being laminated with alternating grain direction. The major processes of manufacture are illustrated on this page.

The water-resistant glue used, after setting under hydraulic pressure, forms a bond of high shear strength, far stronger, in fact, than the wood fibres themselves.

In the manufacture of Douglas fir plywood only the choicest Douglas fir logs are used. Douglas fir grows on the Pacific slope, where climatic conditions produce a wood combining soft texture and light weight with extraordinary strength. Because of these characteristics, Douglas fir is widely specified for heavy structural timbers.

» PHYSICAL CHARACTERISTICS «

Test Data on pages 10 and 11

Because the veneers are rotary cut, not sawn, Douglas fir plywood is available in standard sizes as large as 4 x 8 feet—and in even larger sizes on special order. Largely because of these sizes, Douglas fir plywood makes possible savings of 40% to 75% over ordinary lumber in handling and labor cost.

Because the grain of each ply composing the material is at right angles to the grain of adjacent plies, the strength of a Douglas fir plywood panel is approximately equal in both directions. By contrast, the tensile strength of ordinary lumber may be twenty times as high parallel to the grain as across it and the modulus of elasticity from fifteen to twenty times as high. Therefore, a panel of Douglas fir plywood will do the work of solid lumber very much thicker and heavier.

On account of its cross lamination, Douglas fir plywood has no plane of cleavage. Hence, although it is possible to smash the edge of a panel with a heavy axe, it cannot be split.

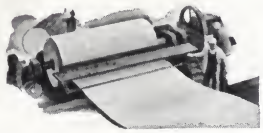
As each veneer, or ply, is scientifically dried before the gluing process, and as any tendency of an individual ply to shrink or expand is prevented by the opposing grain of adjacent plies, Douglas fir plywood is extraordinarily warp-resistant. Once in place, it is warp-proof. Moreover, nails and screws can be driven to the very edge.

A grade and thickness of Douglas fir plywood suitable for virtually every purpose is now available. (See page 11.) It can be obtained through building material dealers in every section of the country, but if unavailable in any particular community, a letter to any of the mills listed on this page will bring the name of their nearest dealer.

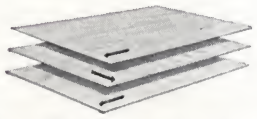
All Douglas fir plywood from Association mills is now made to conform with the new moisture-resistance requirements set forth in the revised standards recently (November 10, 1938) established by the National Bureau of Standards, as U. S. Commercial Standards 45-38.

How Douglas Fir Plywood Is Made

1 Selected Douglas fir logs are cut to length and barked.



2 Then turned on a giant lathe and peeled off into endless lengths of thin wood sheets.



3 These sheets of wood are cut to size, laid cross-grain, and glued together flat with water-resistant glue under hydraulic pressure. (Arrows show direction of grain.)

4 The result is giant panels having all the good qualities of natural wood plus size and convenience,—but with advantages of strength, stiffness, and freedom-from-splitting.

Simultaneously, registered grade-marks and trademarks for all standard panels were adopted by the Douglas Fir Plywood Association mills.

PLYSCORD in a circular stamp will appear on every panel of genuine sheathing grade. Plyscord will also be stamped in parallel lines 16″ apart across the fame for convenience in nailing.

PLYWALL in a square stamp will appear on the back of every panel of genuine Wallboard grade.

PLYPANEL-DFPA will appear on the edge of every genuine panel grade of plywood (Good 2 Sides; Good 1 Side; and Sound 2 Sides).

PLYFORM in a diamond-shaped stamp will appear on one face of every panel of genuine Concrete Form Panel grade.

EXT-DFPA will appear on the edge of every panel of genuine exterior type of plywood, suitable for permanent exterior service, and now made by the hot pressed, resin-bonded process.

These grade marks and trademarks are designed to protect the purchaser of plywood and to assure him that he will always receive the exact grade he specifies.

Plywood, ¼″ thick, over studs spaced 16″ on centers, has been accepted by the FHA in their general ruling No. 67, June, 1937. This item in the wallboard grade is most widely used for walls and ceilings, although for more substantial construction ⅜″ or even thicker is sometimes preferred.

Following promulgation of the grade marking program, the FHA accepted Exterior plywood with certain structural limitations.

SUGGESTED SPECIFIC APPLICATIONS FOR INTERIORS

DOORS—For door panels and dustproof flush doors, Douglas fir plywood has found world-wide acceptance. It combines light-weight strength with extraordinary warp resistance.

BUILT-INS—For cabinets, shelving and built-ins, Douglas fir plywood is preferred material because of the large panel sizes, the freedom from splitting and warping, the ease of nailing and screwing near edges and the variety of thicknesses available for particular and varied uses.

WAINSCOTING—Wainscoting with plywood is especially popular because it is not easily damaged nor marred, does not show water spots and can be adapted to any decorative scheme.

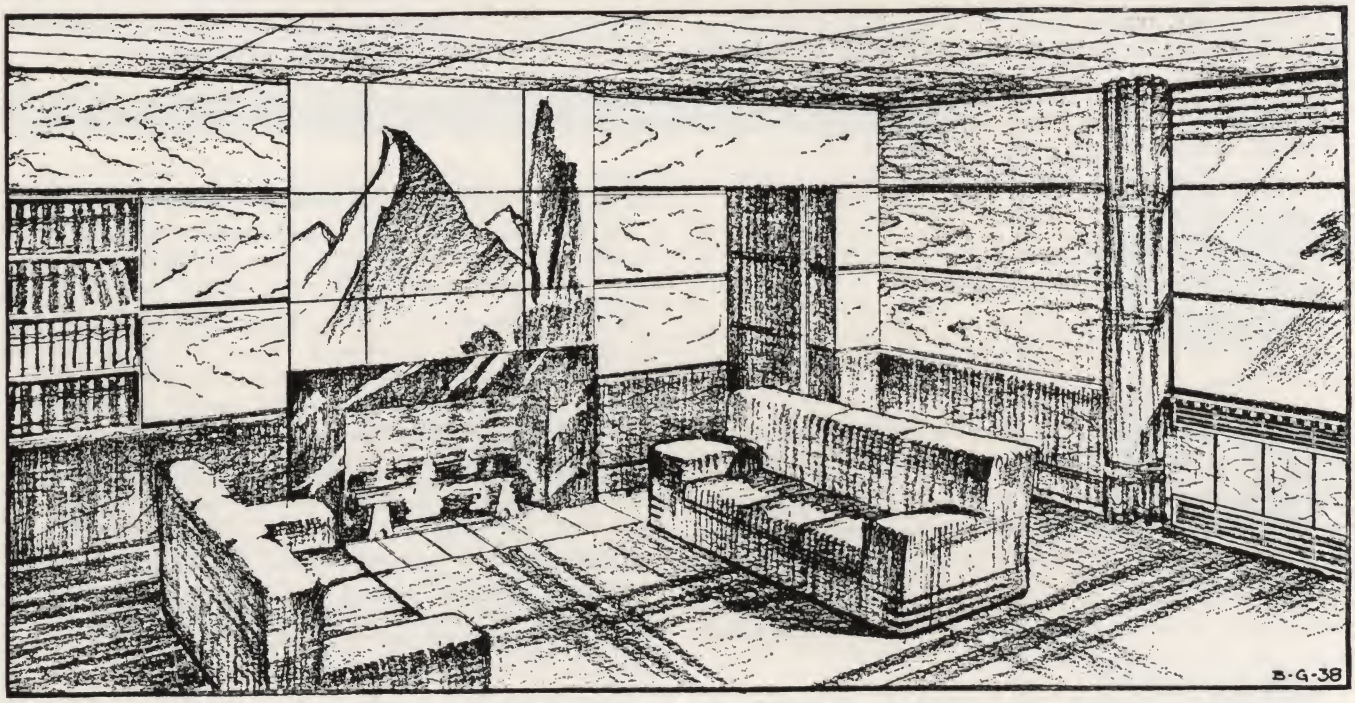
DISPLAYS—For store fixtures and displays, plywood offers architects and display designers a material that is easy to work, rigid and can be re-used for store fixtures and window displays, such as backgrounds, display props, special niches, cut-outs and shadow boxes.

PARTITIONS—For office partitions, whether permanent or removable, Douglas fir plywood provides a rigid, attractive and workable material. An economical partition of plywood—if not less than ½″ thick—may be constructed with simply a cap and shoe.

Architect Tennys Francis Bellamy selected Douglas fir plywood natural finish as the interior for the recreation room in the Blue Ridge Model Home.

Waiting room in a modern office building as designed by Architect W. F. Ruck showing effective treatment of Douglas fir plywood in a natural finish.

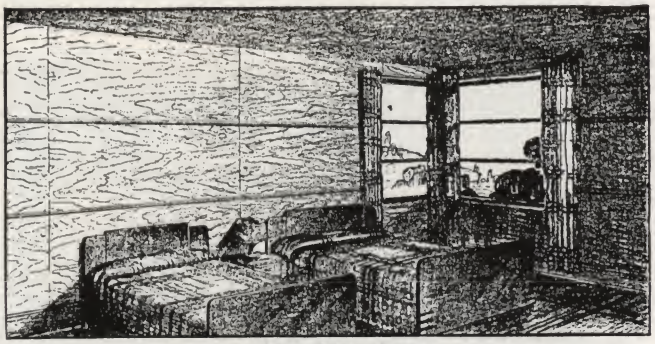
» CHARMING MODERN INTERIORS WITH PLYWOOD «



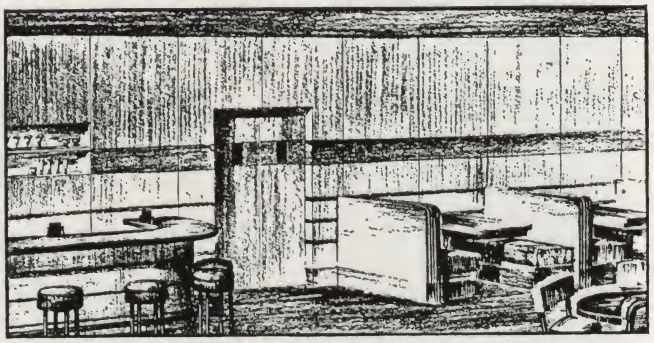
MODERN LIVING ROOM

The renderings and details on this page were prepared by Carl F. Gould, F.A.I.A., as suggestions to architects and builders of possible methods of applying Douglas fir plywood as decorative panels in modern house and store design.

Where paneling of practically clear veneer made of a single large sheet is desired, the Good 1 Side grade is recommended. For most purposes, however, where a few neat face patches are not objectionable or for paint finishes, the Wallboard grade is entirely suitable and is generally preferred. For standard 16″ stud spacing, ¼″ panels are adequate.

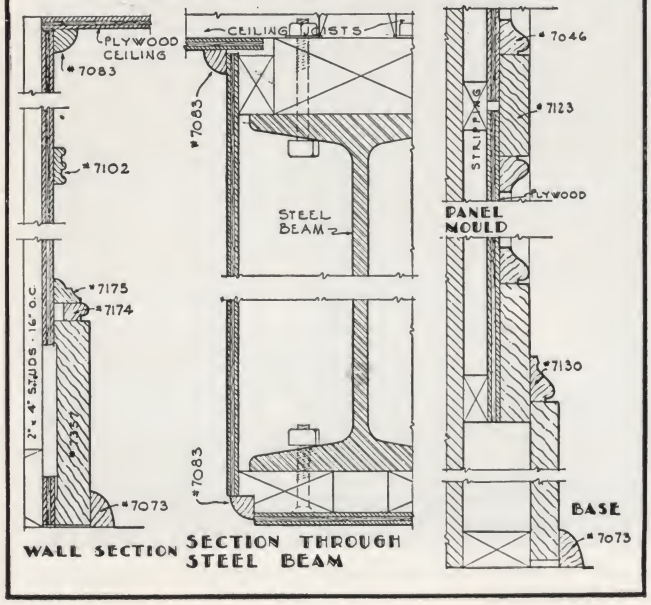


MODERN BED ROOM



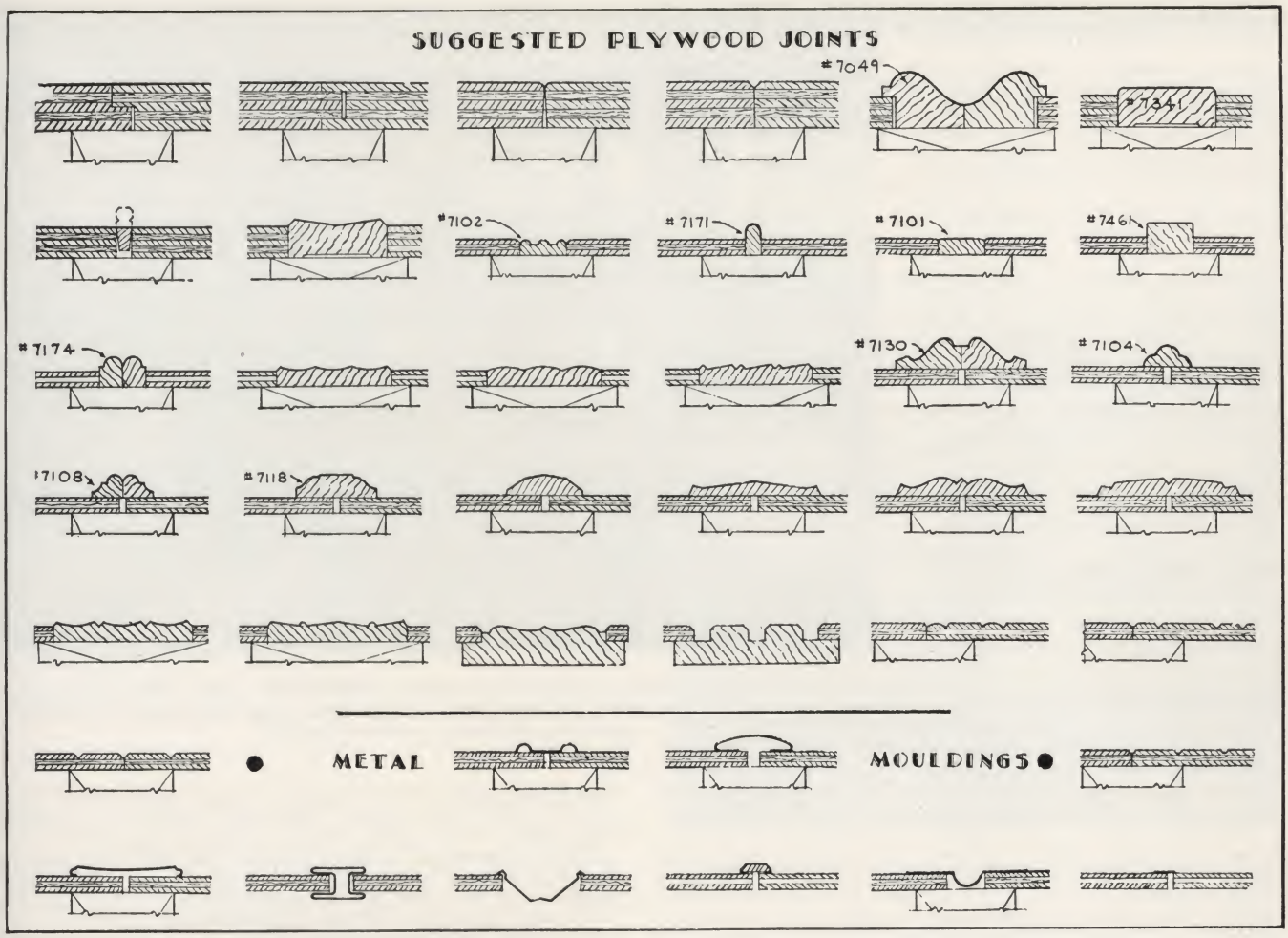
RESTAURANT AND BAR

TYPICAL DETAILS



The 4d casing or finishing nail is recommended for paneling up to ½″ thick with the nails spaced from 6 to 10″. One horizontal header or fire stop should be cut in between studs midway between top and bottom plates as a nailing piece.

Details by competent architects will help to bring Douglas fir plywood the recognition it so richly deserves as a beautiful and charming material in its own natural color.



ATTRACTIVE FINISHES

Plywood panels may be finished in a number of ways, including staining, painting, wall papering and mechanical surfacing. For the discriminating lover of wood, the beauties of the natural grain are best revealed by clear lacquer, wax and light stains. The character and distinctiveness of the grain of Douglas fir plywood permits a variety of pleasing effects and averts monotony, although panels may be selected for matched appearance where desired.

STAINING

Where Douglas fir plywood is to be stained, panels should be sealed with a clear, resin sealer. These sealers applied at the mills directly after sanding (and dusting) prevent subsequent stain coats from penetrating into the soft springwood of Douglas fir. As a consequence an even distribution with a softened grain tone is effected and both moisture penetration and grain-raising are practically eliminated. Steps to produce stained finish may be tabulated as follows:

Flat Stain	Gloss Stain	Lacquer
Stain	Stain	Stain
Coat of shellac	Shellac	Lacquer sealer
Sand	Sand	Clear lacquer (flat or gloss)
Flat varnish	Gloss varnish	

PAINTING

A painted surface may be desired where the grain of the wood will be entirely concealed. Several finishes are then available and may be obtained by using the following specifications:

Egg Shell	Stippled	Paint, Plaster, or Rough Texture	Gloss Enamel
Lead & Oil Primer or resin sealer	Primer or sealer	Primer or sealer	Primer or sealer
Undercoater	Undercoater	1 coat of stippled paste; skilled painter can produce finish as specified by architect	Undercoater (2 coats preferable)
Egg shell enamel	Stippled paste		Gloss enamel recommended; glaze coat, and special care in jointing and in using dry panels
Optional (1 coat of glaze color to soften finish-wipe before drying)	Optional (glaze coat to soften finish)		

The variety texture known as stippling is one of the simplest, commonest, and most satisfactory interior finishes. It is accomplished by striking the wet paint with a wall stippling brush. It eliminates brush marks and imperfections in the surface.

Furthermore, finishes with a certain amount of relief, providing texture and depth, can be produced with white lead plastic paint for the finishing coat.

SINGLE PRIMING COATS AS FINISH

Attractive and economical finishes on Douglas fir plywood may be obtained by using a resin sealer and then priming with a single priming coat, tinted with any desirable color, such as tan or brown, that will blend with the furnishings and permit the grain of the Douglas Fir to show through the priming coat in subdued, warm patterns.

PRECAUTIONS FOR PAINTED FINISHES

Before painting plywood panels, care should be taken to see that they are thoroughly dried or acclimated to the actual service conditions of the room in which they will be used. This precaution is desirable to avert hair checks—the minute, fine checks sometimes occurring in the face of any wood panel that has been permitted to absorb too much moisture before being installed in a dry room; also, to avert a crack in the joints between panels. Plywood is virtually free from shrinkage because of its cross laminated structure and the fact that wood does not shrink or expand longitudinally, that is, along the grain; nevertheless, unless care is taken, an almost infinitesimal movement of the panels or of the framework on which they are fastened, may cause a crack which will be noticeable in an enamel finish.

Architect Ralph Flewelling used Douglas fir plywood effectively on the walls of this modern den. Dado finished in green, the upper wall in aluminum with white, and the ceiling a maroon reflecting the rubber tile floor.

WALLPAPER OVER PLYWOOD

Plywood's popularity as a base for wallpaper is attributed to its freedom from cracking, its smoothness, its large panel size and ease of erection, and the general economies obtained through its use.

The Wallboard grade of plywood panels should be closely butted with joints filled with a good joint filler, such as plastic wood, Swedish putty, or similar material. After the filler has dried, the joints should be lightly sandpapered.

The panels should now be coated with a wheat flour paste to which has been added a gelatin size. Over the plywood a layer of ¾ lb. deadening felt treated with the same paste and size, is applied.

The felt should be butted neatly at the joints, rolled and smoothed. From the ceiling it should run down about 1″ on the sidewall so that the strips applied to the sidewall will lap about 1″ over the ceiling strips. Many decorators also go over the felt with a smoothing brush to assure uniform adhesion to the plywood.

When the felt has been entirely installed, the wallpaper is hung in accordance with standard practice, using ordinary wheat flour paste.

FINISHING PLYWOOD FOR INTERIORS

Only the Exterior grade of Douglas fir plywood should be used for permanent exterior exposures. Edges are preferably knifed with white lead and outside surfaces should be finished carefully with three coats of high quality paint. In extremely damp localities, the panels should also be back-primed.

Without exception, ready-mixed paints used for priming should be reduced with pure raw linseed oil—usually with one gallon of oil to one of paint. Subsequent coats should be applied as the paint manufacturer recommends.

In mixing aluminum paint, which is especially moisture-resistant, only high grade vehicles—such as kettle-bodied oil or long oil spar varnish—should be used. Ordinary boiled oil or raw linseed oil should not be used. Many paint manufacturers now offer a vehicle specifically prepared for aluminum powder.

On large, unbroken surfaces, priming and subsequent coats, such as calcimine, should be applied by sweeping the brush in a semi-circular fashion. If the surface is small or broken by paneling, it is best to follow the grain.

Driers should be used very sparingly. Shellac should never be used on Douglas fir plywood which is exposed to the weather.

HANGING WALLPAPER OVER PLYWOOD

Sizing the plywood with wallpaper paste, before hanging felt.

Straight edge ¾ lb. felt is tightly butt-jointed.

Felt is carefully smoothed to assure uniform adhesion.

Wallpaper is then hung in accordance with standard practice.

PLYSCORD *sheathing, 5/16" in thickness, being applied to the walls of a modern home. Note the compact, tight appearance of the structure, the ease with which the panels can be handled by one man.*

Douglas fir plywood for sheathing and subflooring has been accepted by building authorities throughout the country, including the FHA, the Pacific Coast Building Officials Conference (the Uniform Building Code has been adopted by more than 200 cities and towns from California to Maine), and has been established as a material of structural superiority through a comprehensive series of tests at the U. S. Forest Products Laboratory (see chart), the University of Washington, Stanford University, and many municipal building departments.

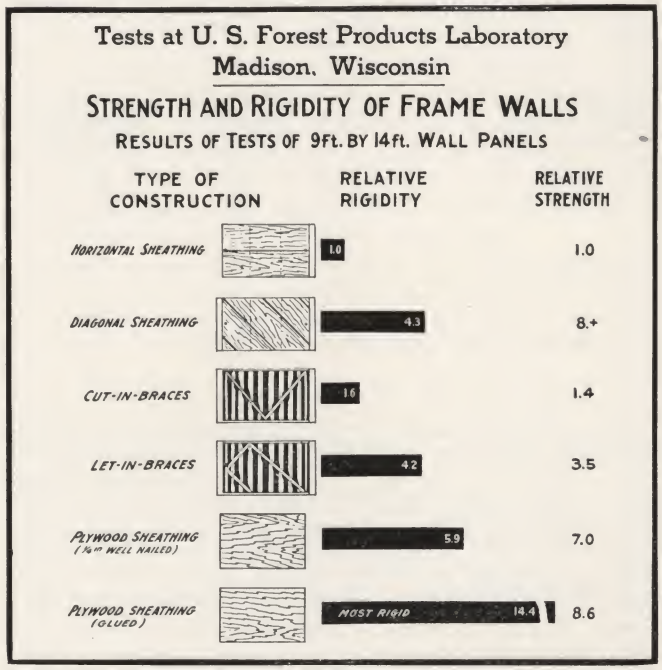
The 5/16" thickness of Douglas fir plywood sheathing is listed as one of several acceptable materials for exterior wall and roof sheathing by the FHA in Revised General Ruling No. 61 (dated June 29, 1937, and still in effect). Similarly the 5/8" thickness of Douglas fir plywood is listed as acceptable for subflooring with joist spacing of 16 inches. Exterior plywood is also accepted by the FHA with certain structural limitations.

This recognition by government authorities, following laboratory tests and approval, supplements the practical experience of architects and builders who have found plywood an outstanding material for sheathing and subfloors. It possesses proven structural superiority, insulating and windproofing properties and definite economies in application.

The stiffening properties of Douglas fir plywood as a wall, floor or ceiling covering render it particularly suitable as a structural material in earthquake and mining regions where public buildings must be designed to resist horizonal impact stresses from earth movements.

Vapor barriers may be necessary in walls in those areas where condensation is a problem due to high humidities and low outside temperatures. Where required they should, according to Professor F. B. Rowley of the University of Minnesota, be placed on the inner or warm side, and not on the cold or sheathing side of the wall where the exit of moisture from wall cavities may be prevented. On the inner walls, two coats of asphalt paint on the back of Douglas fir plywood interior wall paneling or a layer of asphalt coated and impregnated sheathing paper (weighing 50 pounds per roll of 500 square feet) applied to the studs and ceiling joists before applying the plywood makes a highly effective vapor barrier at very low expense, according to tests made at the U. S. Forest Products Laboratory.

No material waste, savings up to 50% on labor costs and a reduction in overall job time may be expected when PLYSCORD *sheathing is used on walls and roofs under shingles, shakes, brick or other conventional siding or roofing.*



Note that walls sheathed with Douglas fir plywood are 6 times as rigid as those sheathed horizontally with conventional shiplap and 40% more rigid than those sheathed diagonally.

PLYSCORD *subfloor, 5/8" thickness, is quickly installed. This makes a warm, squeakless subfloor suitable for conventional finish floors, linoleum or other resilient flooring. Room partitions and built-ins may be marked on this clean subfloor with ease.*

PLYSCORD—A NEW GRADE

Douglas fir plywood is now available in a new and improved grade known as PLYSCORD. Grade-marked, trade-marked and scored for ease of nailing on 16" centers, this new construction material has an improved face, is available in panels 32" and 48" wide, 96" long and in three popular thicknesses, 5/16", 3/8" and 5/8".

Exterior walls are sheathed with the 5/16" thickness to which shingles may be directly applied as proved by extensive tests at the University of Washington under Professor Bror L. Grondal who states, "Douglas fir plywood, as a base for western red cedar shingles, provides the necessary nail-holding qualities, even when 5/16" plywood, the thinnest tested, is used." This sheathing should be applied with 6d nails, spaced 6" apart at edge bearings and 12" apart elsewhere.

For roof sheathing, the following table shows PLYSCORD thicknesses with deflections limited to 1/270 of the span between rafters.

Total Roof Load in Lbs. per Sq. Ft.	Maximum Rafter Spacing	Thickness of Plyscord Sheathing
20	20	5/16"
	24	3/8"
	36	5/8"
30	17½	5/16"
	21	3/8"
	33	5/8"
40	16	5/16"
	19	3/8"
	29½	5/8"

For subflooring, 5/8" PLYSCORD is generally recommended, although recent tests at the University of Washington which were completed too late to be included in this edition, indicate the complete adequacy of ½" plywood for this purpose. Uniform loading of 100 lbs. per square foot, over 16" span, caused deflection of only 1/20 inch on this rigid material. PLYSCORD subflooring should be nailed to joists with 8d common nails, approximately 6" apart at all edges and 10" apart at interior joists. The panels should be applied lengthwise across joists, with ends bearing on joists.

Contractors who have used PLYSCORD for wall and roof sheathing and subflooring report savings up to 50% on labor costs due to the ease and rapidity with which the large panels can be installed; they comment on the large reduction in material waste; they point out the overall saving in job time; and, they declare that the saleability of their houses is improved through the tight, compact, dustproof and windproof appearance of this sheathing and subflooring material with its minimum linear footage of joints.

DETAILS FOR APPLICATION

PLYSCORD sheathing, 5/16" in thickness, and ¼" interior wall paneling produce a thinner wall section but permit the use of standard stock window frames in several different ways:

(1) Moulding strips around the outside window trim may be used to close the gap between the sheathing and the outside casing.

(2) The stock frame may be slid inwards against the sheathing and moulding strips used around the inside trim to close the space between the wall paneling and the trim.

(3) One-half inch furring strips may be used over the outside wall (this produces a double air-space and thereby increases the insulation value of the wall).

Stripping 5/8" PLYSCORD sheathing from the concrete foundation. This material will then be used for the subfloor. As concrete form material, plywood produces a smooth finish on the concrete, thereby reducing rubbing and finishing costs.

>> DRI-BILT DATA <<

Dri-Bilt construction, which has created so much interest during the past year, is simply the use of Douglas fir plywood over standard framing. Wall and roof sheathing, subflooring and interior wall and ceiling covering are all of plywood for maximum rigidity, economy and simplification of interior finish.

Standard framing practise is followed with 16" stud and joint spacing, but by means of a few minor modifications, involving no extra expense, the application of stock plywood panels 4x8' in size is made more economical with practically no cutting except for openings.

For example, the first stud can be set 16" from the outside edge of the corner post so that by maintaining 16" spacing, the edges of standard panels come directly over the studs; similarly for floor joists except that the outside joist and the built-up sill is set out 5/16" from the face of the studs, thus averting the necessity of running exterior sheathing down over the sill. This also permits the use of standard 4x8' sheathing panels placed either horizontally or vertically, without cutting except for openings. Where possible the face of wall partitions is an even multiple of 4' from the opposite wall, again to eliminate the cutting of the standard 4' panels.

The heat conduction coefficient of the Dri-Bilt wall, without any added insulation, varies from .239 to .296 BTU.

» CONCRETE FORM PANELS FOR ARCHITECTURAL CONCRETE «

The smooth finless surfaces demanded for architectural concrete buildings, as well as for bridges, viaducts, warehouses and residential foundations are obtained with PLYFORM, the Concrete Form Panel grade of Douglas fir plywood.

These panels, made with special highly water-resistant glues and grade-marked by Association mills for ready consumer identification, have demonstrated their superiority on thousands of jobs throughout the country.

Outstanding assets of this Concrete Form Panel grade are:

1. They may be re-used from 7 to 15 times and more.
2. They effect important savings in carpentry labor.
3. They save up to $100 a thousand feet in rubbing and polishing labor.
4. They permit of faster stripping of forms.
5. They form smooth, finless surfaces.
6. Their giant size reduces the linear footage of joints.

PLYFORM is stocked in sizes up to 4x8′ and in thicknesses of ½″ to ¾″. Many contractors prefer the ⅝″ or ¾″ thickness. Where curved surfaces are desired and only one or two uses are needed, or where the building design or size does not permit several re-uses of form material, many contractors and architects use ¼″ plywood in the Wallboard grade for lining forms. This thickness can be easily bent to a 12″ radius providing the curve is across the panel.

Concrete Form Panels of Douglas fir plywood used on Columbia Broadcasting Company's KNX Studios in Hollywood by William Lescaze, Architect, and Earl Heitschmidt, Associate.

Interior of Marquette Cement Company's employees' Natatorium at Cape Girardeau, Mo., which was formed with Douglas fir plywood. Note natural finish and painted wainscot.

On concrete form work where the maximum re-use is desired, the Exterior grade of PLYFORM with the strictly waterproof bonding agent, may be specified.

SPECIFY PLYFORM

These panels are officially grade-marked by the Douglas Fir Plywood Association and should be specified for concrete work since the specially improved binding agent used in the manufacture of this grade insures quality performance on the job, thereby assuring substantial savings. Carpentry labor is reduced by the use of the large panels instead of narrow boards and by elimination of the extra labor of lining forms, since Concrete Form Panels are sheathing material and lining material combined in one. The giant panels also admit of quick, easy stripping with a minimum of dismantling damage.

Plywood panels possess grade rigidity. A ⅝″ panel over 12″ joist spacing deflects less than 1/50 of an inch under a uniform loading of 225 pounds per square foot.

Plywood contributes great rigidity to large built-up form panels; tests at the U. S. Forest Products Laboratory show ¼″ plywood sheathing is 5.9 times as effective as 1″ horizontal boards in making wall panels rigid against racking and distortion.

Furthermore, the surfaces of the plywood produce such smooth concrete that rubbing labor is reduced to a minimum. Savings from 5c to 12c per square foot have been reported in rubbing labor alone.

Plywood, moreover, reduces expenses also because 1000 square feet of this material can be used to cover 1000 square feet of surface. It is therefore unnecessary to purchase 20% to 30% extra material to allow for matching and cutting as is the case with conventional form material.

Easily worked and easily nailed without boring holes, 12 to 15 re-uses of plywood, Concrete Form Grade, are reported on many jobs, including the roadway of the San Francisco-Oakland Bay bridge. Where the Exterior grade of plywood is used as many as 55 re-uses is not uncommon.

Finally, the Concrete Form Grade of Douglas fir plywood may be salvaged for various utility uses, such as, sheathing, subflooring and fencing.

ARCHITECTURAL EFFECTS

Unlimited areas of unbroken plane surfaces may be cast with Douglas fir plywood Concrete Form Panels. Moldings on the face of forms permit the architect to create "struck joint" effects. Ornamentation through reverse molds readily applied to plywood limited only by the skill of the craftsman.

Write the Association for special new technical Handbook on the Use of Douglas Fir Plywood for Concrete Forms.

» DEFLECTION CHARTS «

These charts show deflection of Douglas fir plywood when acting as a simple beam, i.e., resting on only two supports, *without any nailing.*

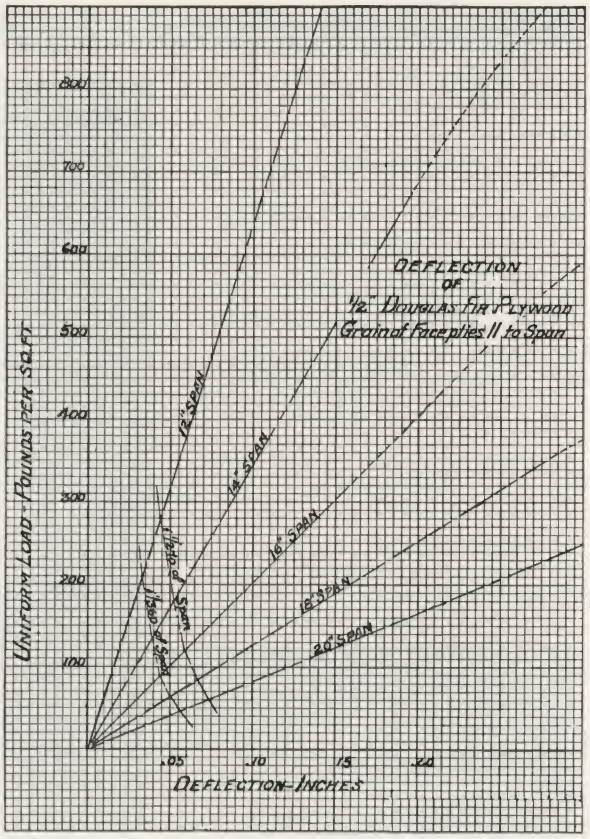
The charts are based on a comprehensive series of tests conducted recently at the Forest Products Laboratory of the University of Washington. The results are in accord with the theoretical deflections computed as tentatively recommended by the United States Forest Products Laboratory at Madison, Wisconsin.

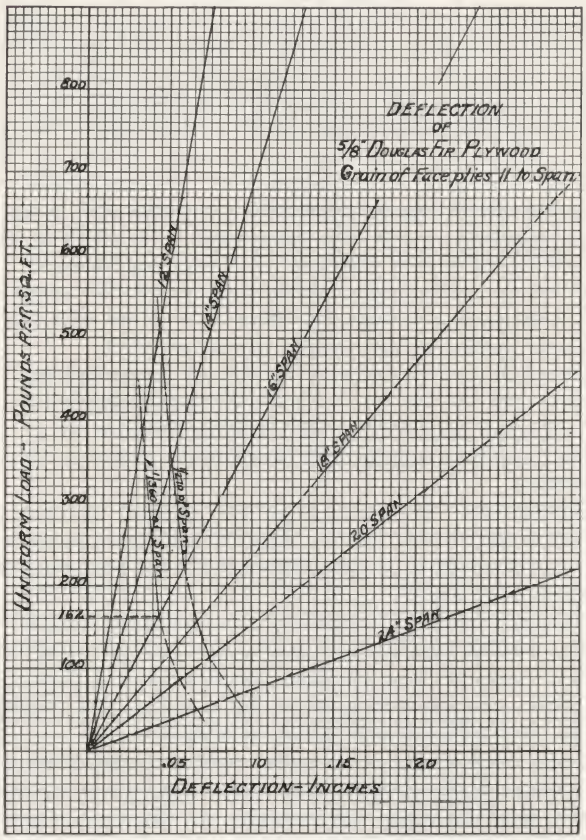
For convenience, lines have been added to show deflection of 1/360th and 1/270th of the various spans. For example, using ⅝-in. plywood over a 16-in. span, with deflection limited to 1/270th of span, as in most concrete work, a loading up to 221 lbs. per square foot may be used. If the supports are placed only 12 in. apart, the loading may be increased to 510 lbs. per square foot.

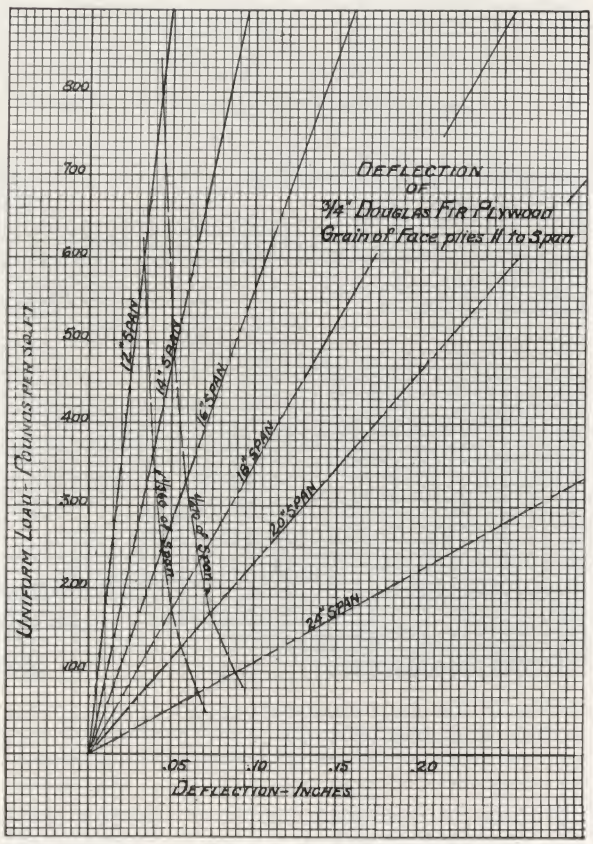
If load is continuous over two or more spans, the deflection will be approximately ½ that shown, and therefore, twice the load shown may be used.

The charts show the deflections of Douglas fir plywood when the grain of the face plies is parallel to the span, i.e., when panels are placed lengthwise across the supports. When panels are placed parallel to the supports, the loads causing any given deflection will be smaller than shown on the charts, as follows:

For ½-in. thickness, use 40% of load on chart;
For ⅝-in. thickness, use 50% of load on chart;
For ¾-in. thickness, use 75% of load on chart;
for any given span and allowable deflection.







»PLYWOOD TEST DATA«

In order to present a general comparative picture as to the strength properties of Douglas fir plywood, and other materials sometimes used in its place, the results of a series of tests conducted at the Northwest Testing Laboratory, the Northwest representative of the nationally-known Pittsburgh Testing Laboratory, are summarized at the right:

In the tension tests, all specimens were 3"x18"; in the compression tests, 6"x6" pieces were used. Tests on each material were conducted under exactly the same conditions.

Thickness of material	Tension		Compression	
	Ultimate load	Ultimate stress	Ultimate load	Ultimate stress
LOAD ACTING WITH THE GRAIN OF FACE PLIES				
¼", 3-ply	5250	6484	4198	2855
⅜", 3-ply	5644	4750	6630	2860
½", 5-ply	8024	5135	10492	3497
⅝", 5-ply	8132	4350	10644	2893
¾", 5-ply	8912	4074	18538	4186
LOAD ACTING ACROSS GRAIN OF FACE PLIES				
¼"	2552	3291	908	609
⅜"	4684	4141	5206	2180
½"	7664	5108	6462	2162
⅝"	8326	4491	9096	2472
¾"	8796	3932	15262	3436
TESTS ON OTHER MATERIALS				
A-3/16"	1248	2189	390	346
B-3/16"	1276	2180	846	751
C-¼"	264	352	826	550
D-7/16"	152	126	448	170
E-½"	370	248	690	230

Key: Material A, old-style fibre wallboard; B, hard, compressed board; C, plaster-board; D and E, insulating boards.

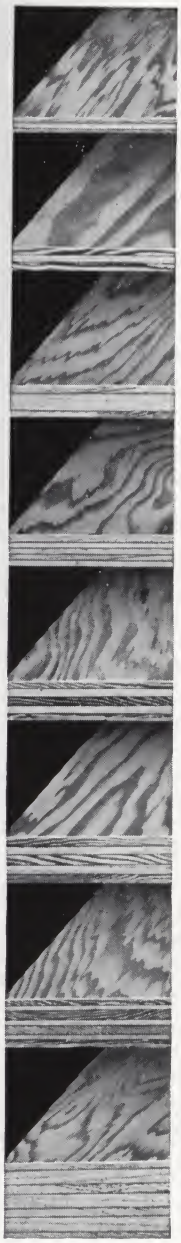
Nail-Pulling Tests—Nail pulling tests were also made on Douglas fir plywood, and the other materials tested in tension and compression, to ascertain their resistance against nail-heads pulling through, when the materials were nailed to a wood base. Eighty-five per cent of the cement coated box nails (a more severe test) used with the plywood were pulled out of the base when the plywood was pulled loose, whereas every other material was pulled loose without removing a single nail; the nail-heads simply punctured the other materials. With plywood the load required varied from 131 to 138 pounds for each 4d box nail up to 275 pounds with 8d box nails; for the other materials (excepting material B) loads averaged only from 45 to 59 pounds per nail for 1½ galvanized roofing nails and 4d box nails. Material B with 4d box nails, required from 92 to 101 pounds per nail.

The superior hardness and splitting-resistance of Douglas fir plywood were evident.

Flexural Tests—Deflection curves, based on a comprehensive series of tests conducted at the Forest Products Laboratory of the University of Washington, are shown on Page 10, under concrete form panels.

These tests show that ⅝-in. plywood sheathing is equal to diagonal flooring as to strength and deflection and furnish the engineer and architect with data to permit use of plywood in a multitude of structural designs.

Representative Plies and Thicknesses of DOUGLAS FIR PLYWOOD



¼ in.—3 ply
Used largely for drawer bottoms, case and picture backs, and toys. Most Douglas Fir Plywood wallboard is made in this thickness.

⅜ in.—3 ply
Manufacturers of refrigerators, trunks, kitchen cabinets, store fixtures, auto body parts, and instrument cases use this construction.

½ in.—3 ply
This is an economical shelf material for cabinets of all kinds. Also used in auto body parts, incubators, etc.

½ in.—5 ply
This construction is superior to that just above, both in tensile and in transverse strength. When ½ in. is required in large sheets this construction is recommended.

⅝ in.—5 ply
In floor boards, lock boards, seat frames and other automobile body parts and for concrete forms, etc., this thickness finds especial favor.

¾ in.—5 ply
Used by auto body manufacturers preferring a heavier floor board. Also recommended for heavy shelf construction, store fixtures, concrete form lumber.

⅞ in.—7 ply
Furnishes extraordinary, well-balanced strength. Much used in ship building for bulkhead panels, stateroom partitions, etc.

1 3/16 in.—7 ply
Widely used for instrument boards, ice machine bases, desk tops, bus seats and a variety of other purposes requiring an exceptionally strong and rigid board.

TABLE OF DOUGLAS FIR PLYWOOD STANDARD SIZES

Item	Widths	Lengths	Thicknesses
Standard Panels Plypanel	From 12", increasing by 2-in. units to 30"; also 36", 42", and 48"	48", 60", 72", 84", and 96"	3/16" (3-ply sanded 2 sides) increasing by 1/16" thicknesses to 1 3/16" (7-ply)
Wallboard Plywall	48"	60", 72", 84", and 96"	¼", ⅜" 3-ply sanded 2 sides; and ½" 5-ply sanded 2 sides
Sheathing Plyscord	32" and 48"	96"	5/16" and ⅜" 3-ply unsanded, and ⅝" 3- and 5-ply unsanded

Douglas Fir Plywood Grades

(See U. S. Commercial Standards, CS45-38)

Good Two Sides (G-2-S)—This grade is intended for natural or light stain finishes. Both faces are clear and 100% heartwood of a yellow or pinkish color.

Good One Side (G-1-S)—One face is the same as that described under Good Two Sides grade, while the opposite face is the same as the Sound Two Sides grade described below.

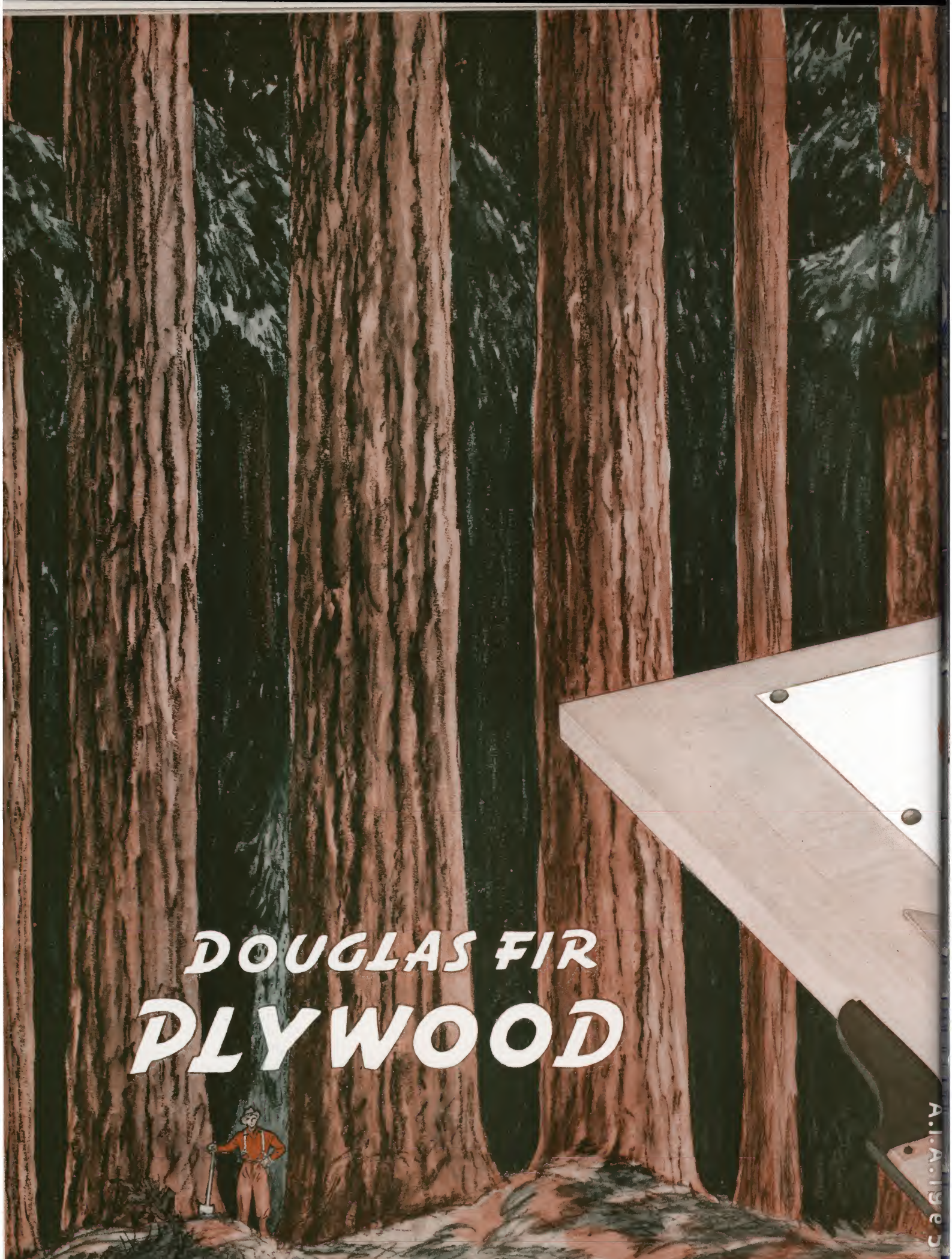
Sound Two Sides (SO-2-S)—This grade presents a smooth, sound surface on both sides suitable for painting. The faces may be of one or more pieces of firm, smoothly cut veneer. If of more than one piece, they will be well-joined and reasonably matched for grain and color at the joints. Sap and natural discoloration are considered no defect.

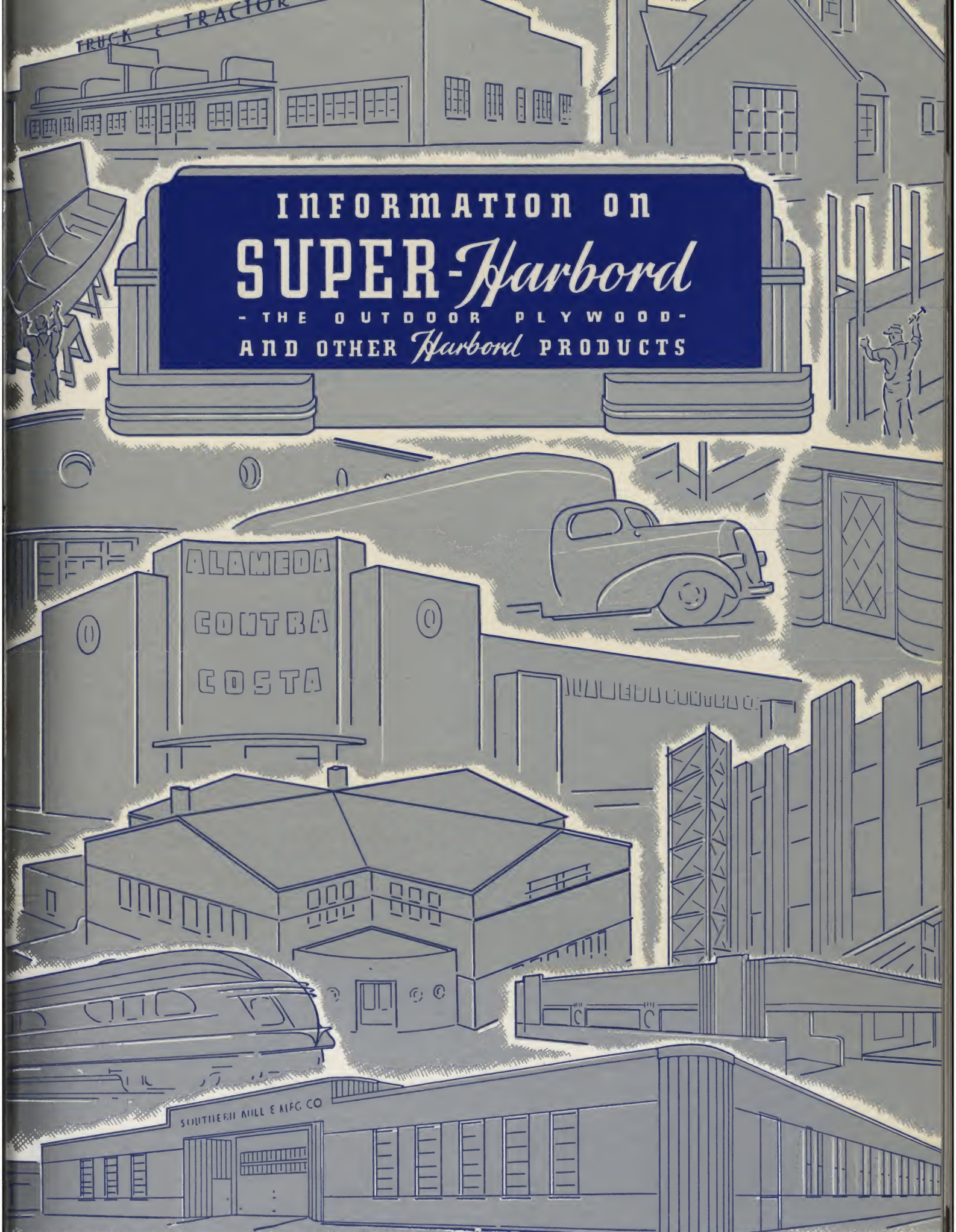
Wallboard (Plywall)—The face side is the same as described under Sound Two Sides. The opposite side contains defects in number and size that will not affect the strength or serviceability of the panel.

Sheathing (Plyscord)—Both sides of this 5/16-in., ⅜-in. and ⅝-in. unsanded plywood contain defects which will not seriously affect strength or serviceability, but one face is made tight by patching.

Concrete Form Material (Plyform)—(Made in standard panel dimensions with special highly water-resistant glue). ⅝-in. thickness is recommended for most form jobs, but ½-in., 5/16-in., 11/16-in. and ¾-in. panels are stocked in standard panel widths and lengths. Both faces are carefully selected and sanded. When specified, panels will be mill-treated with special water-repellent oil at nominal cost. Panels ¼-in. thick are available as form liners and for curved surfaces.

Exterior (EXT-DFPA)—This class of panel made in various grades and with waterproof glue is suitable for permanent exterior exposures.


DOUGLAS FIR
PLYWOOD

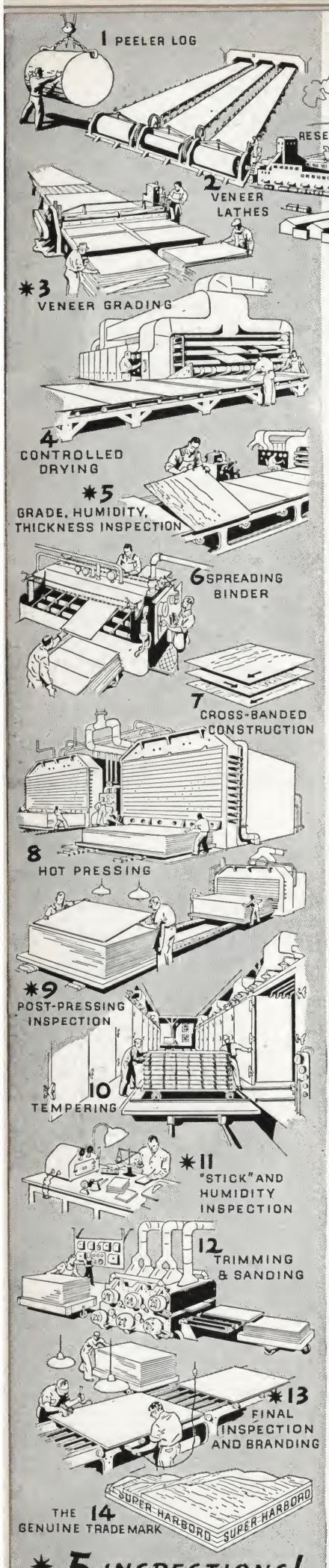


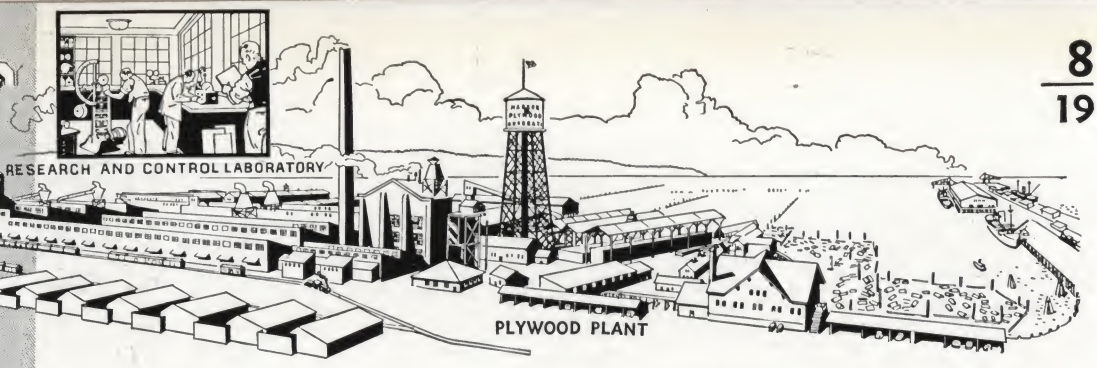
INFORMATION ON SUPER-Harbord

- THE OUTDOOR PLYWOOD -

AND OTHER *Harbord* PRODUCTS

HARBOR PLYWOOD CORPORATION • MILLS AND GENERAL OFFICES • HOQUIAM, WASHINGTON • U. S. A. •





HARBOR PLYWOOD CORPORATION

MILLS AND GENERAL OFFICES

HOQUIAM, WASHINGTON

Distributing Warehouses: Atlanta, Baltimore, Chicago, Cincinnati, Cleveland, Columbus, Indianapolis, Jacksonville, Los Angeles, Louisville, Milwaukee, New Orleans, Philadelphia, Pittsburgh, San Francisco, Toledo, Washington, D. C.

Representatives: Billings, Denver, Kansas City, Omaha, Worcester

Featured Product: SUPER-*Harbord*, The Outdoor Plywood

OTHER PRODUCTS

SUPER-*Harbord* Guaranteed WEATHERPROOF HARBOR PLYWOOD CORPORATION

Harbord Plywood Products—Harbord Plywood; Harbord Sheathing; Harbord Wallboard; Harbord Plycrete (for Concrete Forms); Harbord Industrial Plywood; Harbord Lauan Plywood (Rotary only).

SUPER-Harbord Products—SUPER-Harbord Plywood (in all grades—in panels as large as 8x16 feet); SUPER-Harbord Plycrete (for Concrete Forms); SUPER-Harbord Lauan Plywood (Ribbon or Rotary); SUPER-Harbord Redwood Plywood, HARBORSIDE.

Manufactured Products—Harbord Tennis Tables; SAG-NOTT Doors—guaranteed against sprung joints. (See diagram of cotter-keyed joint.)

This company manufactures a complete line of plywoods of ***three particular types.*** *Principal woods used are Douglas Fir, Redwood, Sugar Pine, and Lauan (Philippine Mahogany). Other western softwoods, and domestic and imported hardwoods are also manufactured into plywood and plywood products.*

The three particular types of plywood may be briefly described as (1) A plywood manufactured by an exclusive patented process using a cresylic formaldehyde synthetic resin binder, ***hot-pressed and tempered.*** *This guaranteed weatherproof plywood is the featured product, and it is trade named "SUPER-Harbord." (2) A plywood manufactured with a highly water resistant* ***casein base cold glue,*** *and intended for limited exposure to moisture. It is particularly designed for concrete form sheathing and/or lining. The trade name for this plywood is "Harbord Plycrete." It contains the same vital element of uniform precision manufacture that characterizes the line. (3) A plywood manufactured with a* ***soya bean base cold glue*** *and intended for uses where it is protected from moisture and weathering. The trade name for this plywood is "Harbord."*

Users and the trade are ***cautioned*** *not to confuse SUPER-Harbord, the Outdoor Plywood, with Harbord. All interests are* ***warned*** *that there is no substitute for SUPER-Harbord, and domestic or foreign plywoods which may be represented as of similar type of manufacture may not be expected to render comparable service. SUPER-Harbord is edge-branded for identification, and the user will be protected by demanding the genuine.*

In addition to the SUPER-Harbord brand, it also is identified with the mark EXT-DFPA indicating that it complies with the performance specifications for exterior plywood as established by the National Bureau of Standards. ***When applied according to specifications on construction otherwise approved, SUPER-Harbord is acceptable for F.H.A. Mortgage insurance.***

SUPER-*Harbord* — PRODUCT AND BACKGROUND

SUPER-Harbord, the Outdoor Plywood, is a remarkable wood product in panel form, which, by reason of its weatherproofness, strength without useless bulk or dead weight, and other characteristics, is being widely used in construction and industry. In its pioneering of the frontiers of plywood manufacture, the Harbor Plywood Corporation developed in its own research laboratory the formulae and processes for producing a plywood that definitely is waterproof. In the strategically located plant—the largest in the world, with especially made precision machinery operated by trained plywood men under the guidance of skilled chemists and engineers—is produced the plywood with which construction men and industrial designers are breaking the shackles which heretofore have retarded progress.

SUPER-Harbord is manufactured by an exclusive patented process using a cresylic formaldehyde synthetic resin binder, hot-pressed in enormous 1,000-ton hydraulic presses (unique in design), and then tempered in closed chambers in which hygrometric equilibrium is thermally controlled above 150° F. **The binder is the vital element of SUPER-Harbord.** It is insoluble in water, withstands weathering, and is impervious to attack by bacteria and fungi; it is toxic to termites and rodents. The thermo-fusing of the plies of veneer with this binder creates a wood panel of large size with a bond between the veneers that exceeds the strength of the component parts. The uniform accuracy of the manufacture enables the engineer to compute stresses and shears without fear of failure at the bond. The product has successfully withstood years of practical service uses in locations of extreme conditions—from cycles of drenchings in tropical climates to disintegrating effects generated by the actinic rays of the desert sun, and from the subzero temperatures in refrigerating units to humid atmospheres of seed culture beds. SUPER-Harbord may be boiled indefinitely, and is unaffected by oils and petroleum products, and most common acids. The cross-banded **balanced** construction of SUPER-Harbord minimizes twisting and warping, and it will not split or crack. Expansion and contraction due to moisture or temperature changes is nil. It has all of the merits of solid wood from the standpoint of the craftsman. SUPER-Harbord is positively guaranteed against separation of plies due to moisture or any weathering condition, and may be expected to render service within the physical limits of the wood fibres of which it is made. This Outdoor Plywood has uses as yet undreamed of for application on myriads of existing and redesigned products, and in numerous features of construction not now discovered.

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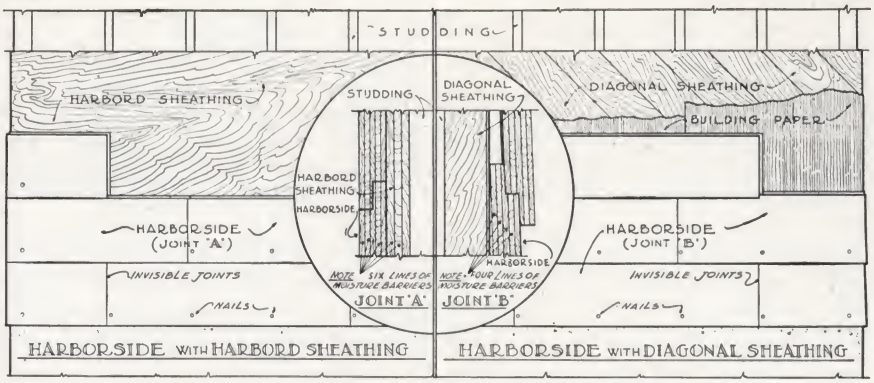


HARBORSIDE, the SUPER-*Harbord* Siding

Lasting protection against the extremes of the elements is assured with beautiful HARBORSIDE, the SUPER-Harbord Siding, now available in all markets. The siding is made in convenient units of 4 ft. or 8 ft. lengths, in either fir or redwood. It is double-rabbeted at sides and ends, lays up faster than other materials, and while elegant in appearance, ***the installed cost is low due to extreme labor economies.***

HARBORSIDE may be applied so as to accomplish a variety of architectural effects—for traditional or contemporary styles. Faintly discernible horizontal rustication lines are made by simple flush horizontal joints, or the horizontal edges may be eased to develop the lines. Simple or accentuated shadow lines are developed by lapping, or the use of auxiliary mouldings (HARMOULDS). HARBORSIDE may be used as vertical siding, in which case 8-ft. lengths fit most jobs without cutting.

The double lap, or rabbeted end, makes a joint practically invisible, and is superior in appearance and service to expensive hand-mitered joints heretofore used. The wood grain of the face is vertical to the length on the 4-ft. size, and parallel on the 8-ft. size. The units are packed in convenient bundles each containing minimum coverage for 100 square feet of wall area. The quantity of HARBORSIDE to be figured for a given job need not be increased to compensate for lapping. A bundle covers at least 100 square feet, and consequently a saving of from 14% to 45% may be credited. Application time is far less than on either strip siding or shingles. End joints are staggered in laying up, and no time is lost for making spliced joints or laying off courses. Ordinarily, end joints should be made over studs, and, since end joints are spaced at 4 ft. and 8 ft. intervals, they naturally fall over framing members in conventional construction. (Headers should be provided if siding is laid vertically.) Corner joints are made by mitering or square-butting to/or under corner boards and trim. 6d non-corrosive nails are recommended; there is remarkable economy in nails and nailing time.

There is only one grade of HARBORSIDE. It contains no face defects to require special painting or shellacking. All edges are treated at the mill with special resin sealer, and when ordered the faces are treated also. In accordance with recommendations of the U. S. Forest Products Laboratory, when applied the edges should be given additional treatment of thick white lead paste.

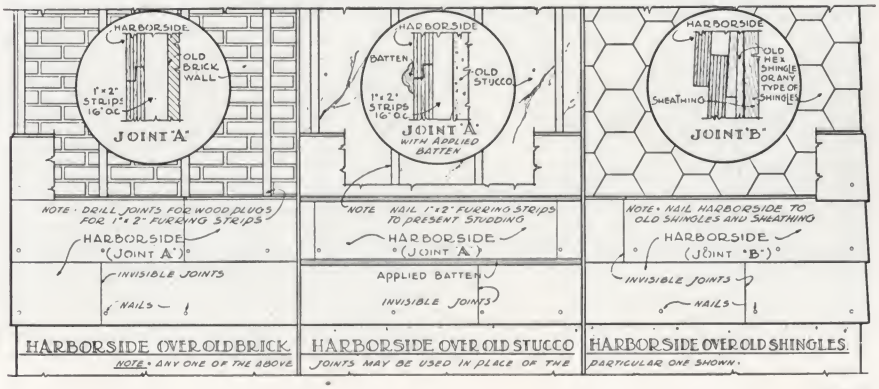
Painters may immediately follow carpenters, since the siding is delivered to the job wrapped, and is dry and ready to apply. The density and texture of the smooth surface are favorable to paint economies. The unit is $\frac{7}{16}$ in. in thickness and 5-ply—accordingly, there are four binder lines to act as moisture barriers to prevent passage of paint disintegrating-moisture to the nether surface of the paint film.

The finished cost of HARBORSIDE (in place) is definitely lower than sidings of equal quality.

HARBORSIDE IN FIR OR REDWOOD

Size	Finish and Thickness	Direction of Grain Relation to Length	No. Pieces Per Bdl.	Covering Capacity
48 x 12½	$\frac{7}{16}$ Sanded 5-ply	Vertical	24	100
48 x 15	$\frac{7}{16}$ Sanded 5-ply	Vertical	20	100
48 x 18	$\frac{7}{16}$ Sanded 5-ply	Vertical	17	102
48 x 23	$\frac{7}{16}$ Sanded 5-ply	Vertical	14	107
12½ x 96	$\frac{7}{16}$ Sanded 5-ply	Horizontal	12	100
15 x 96	$\frac{7}{16}$ Sanded 5-ply	Horizontal	10	100
18 x 96	$\frac{7}{16}$ Sanded 5-ply	Horizontal	9	108
23 x 96	$\frac{7}{16}$ Sanded 5-ply	Horizontal	7	107

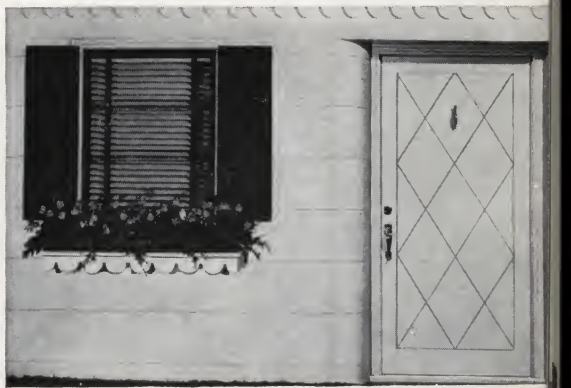
All edges are sealed with special resin sealer—optional face treatment at mill is recommended.



HARBORSIDE'S economy makes it suitable for modest homes.—Pittsburgh.

HARBORSIDE contributes beauty and permanence to this moderate cost home.—Milwaukee.

HARBORSIDE is architecturally versatile, as indicated above.—Jacksonville, Fla.



HARBORSIDE on this modern colonial has a clean sculptured appearance.—Seattle.

SUPER-*Harbord* PANELS FOR EXTERIORS

Performance Specifications—Exterior Plywood (Natl. Bureau of Standards—Par. 24-CS45-38).

"Boiling test pieces four hours and drying at 145° for twenty hours plus boiling for four hours plus testing while wet. Test pieces must show no delamination, average at least 60% wood failure, no individual test piece can show less than 30% wood failure."

SUPER-Harbord shows test results far superior to these government requirements.

SUPER-Harbord, the Outdoor Plywood, extends the range of building design, both from the standpoint of architectural features and engineering practice—the large weatherproof panels are beautiful and strong. With it the practitioner has unlimited design possibilities. The units may become the principal decorative feature (their arrangement the motif), meanwhile contributing important structural values. Function may influence form harmoniously and without sacrifice of permanence, at a cost far below an appraisal of value. It has been aptly said, "It has structural value, it has appearance value, and is not a substitute nor an imitation of anything else. It is genuine in its own right, and stems back into peoples' sentiments because it is wood." SUPER-Harbord has been accorded a spontaneous reception by construction men since its introduction several years ago, and today its use principally as siding or closure is widespread—for buildings of a variety of occupancies.

This weatherproof, guaranteed plywood is regularly available in Douglas Fir, California Redwood, and Lauan (Philippine Mahogany), in stock panels up to 5 x 12 ft. (larger on special order), and in thicknesses from ⅛ in. to 1 $\frac{5}{16}$ in. (thicker to order). Because of the exclusive binder used in making it, the panels are stronger in flexure and shear, contribute to greater paint life (by reason of integral moisture vapor barriers), are more fire resistant, and may be worked to finer detail than the cold glue types of plywood. The balanced construction with higher grade cores and crossband veneers, tight cores and absence of core voids, in conjunction with the binder, further augments its resistance to warping. It may be nailed, or screws driven near the edge without drilling. It may be worked with common hand or power tools and carpenters and woodcraftsmen work with it familiarly. The binder contains no silica; hence tool edges may be retained as with solid wood. SUPER-Harbord is a basic material for dry-built construction.

SUPER-Harbord panels applied flush on this oil station.—Des Moines.

SUPER-Harbord panels with accented lines on this service station.—Bremerton, Wash.

SUPER-Harbord panels applied with invisible joints on this series of stations.—Seattle.

SUPER-Harbord panels applied in tile-like pattern on above job.—Aberdeen, Wash.

SUPER-Harbord panel joints were covered with

These four structures and many others at the Golden Gate International Exposition are being covered with SUPER-Harbord.—San Francisco

FOR CONVENTIONAL OR PREFABRICATED CONSTRUCTION

The efficient use of SUPER-Harbord is not limited to any particular type of construction. On prefabricated construction it has demonstrated its unique qualities to the leading manufacturers, and has become standard specification. Conventional frame types are made stronger, more pleasing, and permanent, and it is easily adapted to use in conjunction with steel, other metals, plastics, and composition, because of the static nature of the exclusive binder used.

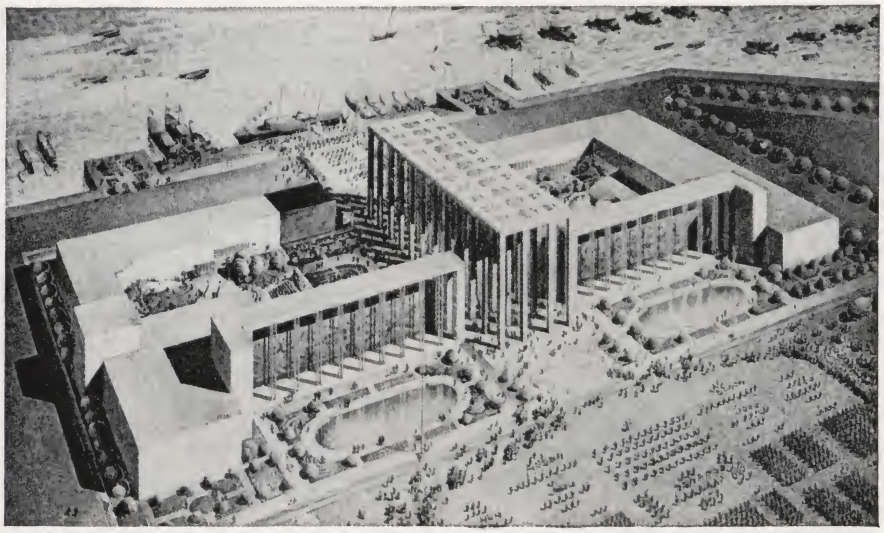
Two principal types of panel joints are used in laying up SUPER-Harbord as exterior covering: (1) A frank recognition of the joint, which, in turn, is capitalized upon for decorative details, and, (2) The successful effort to conceal the joints.

Visible Joints

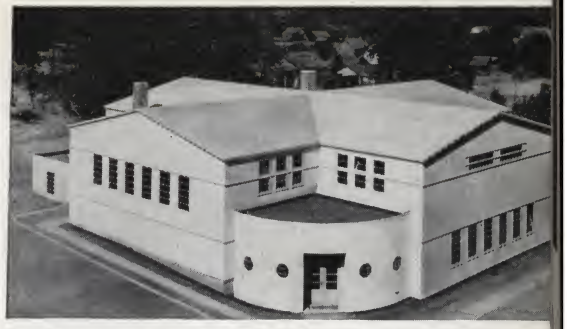
A variety of joint details are used where the lines made are intended to be evident. The lines are so arranged as to contribute to the architectural scheme. Prominent horizontal rustication lines are made by accentuating horizontal joints, or verticals are developed by emphasis on the vertical joints. Giant tile-like patterns are created by accenting both the horizontal and vertical joints. The joint emphasis is done by easing the square edges of the panels to a chamfer angle or to a near-quarter-round. Thus two edges joined form a perceptible "V". The structural joint is made by simply square-butting or some form of shiplapping—the joints to fall over framing members and be nailed thereto. The latter method is superior, and is widely used. It is usual practice to factory-machine the joint to form at least a ½ in. lap, two adjoining edges of the face worked and the opposite two adjoining edges of the back worked. The thicknesses of the SUPER-Harbord panels specified depend upon the spacing of the framing, $\frac{7}{16}$ in. being commonly used for 16 in. centers to be nailed with 6*d* non-corrosive nails directly to the framing without sheathing or backing. Thicker panels up to ¾ in. are used for wider spacings and heavier edge workings. Edges are knifed with white lead or paintable caulking. Sheathing or insulation specifications depend upon climate and other factors.

Invisible Joints

The making of invisible joints involves the use of highly water-resistant cold glues, usually of the casein type, with nails, and some form of gluestick backing or spline inserts on the face. Both types of joint are commonly successful and are hardly perceptible, particularly where decorated with a textured or flat paint. Gloss finishes are not advisable for concealing flush joints.



Above is architect's rendering of Federal Building with Colonnade of States, Golden Gate International Exposition, on which SUPER-Harbord is used extensively for covering and structural features.—San Francisco.



SUPER-Harbord was used for sidewalls and roof of this gymnasium. Other Harbord Plywoods used for making stressed covered laminated rigid bents and interior features.—White Salmon, Wash.

SUPER-Harbord is the covering material used on this factory.—Tulsa.

SUPER-Harbord covering was used on this prefabricated home. The joints are invisible.—Los Angeles.

SUPER-Harbord covering in tile-pattern on above lumber yard and office.—Aberdeen, Wash.

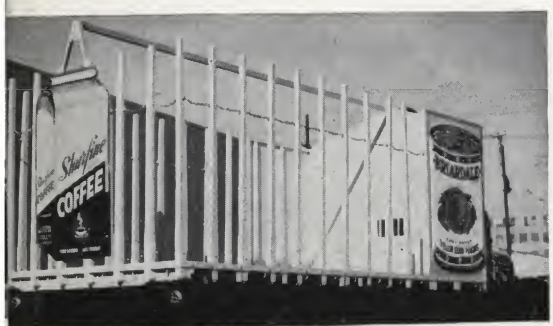
SUPER-Harbord in tile pattern as covering on this sales building.—Aberdeen, Wash.

SUPER-Harbord for signs has demonstrated its suitability on thousands of the above cut-outs, in years of service and in various climates.

SUPER-Harbord used for superstructure and cut-out figure on this unit.

SUPER-Harbord used for superstructure, cut-outs, and animated features of this sign.

SUPER-Harbord used for superstructure, cut-outs, and other features of above diorama-like outdoor unit.



SUPER-Harbord panels used for the signs on this

SUPER-*Harbord* FOR OUTDOOR SIGNS

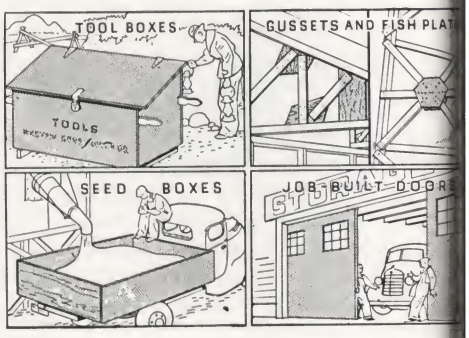
When SUPER-Harbord, the Outdoor Plywood, was made available several years ago, prominent outdoor sign users were quick to see its numerous advantages—to capitalize upon its unique characteristics. Thousands of cut-out signs of the type illustrated at the top left of this page were put into service, and in extremes of climatic conditions. They were installed in locations varying from the desert to the seashore, and from subzero to semi-tropical conditions. These signs today, after years of exposure, still render excellent sales service. Paint life on SUPER-Harbord with these and other units has been demonstrated with remarkable performance. More recently many of the leading outdoor plants have adopted SUPER-Harbord as regular specifications, and for such features of road signs as superstructure, columns, over-panels, cut-out skyline readers, appliques, animated silhouettes, etc. On painted bulletins it is also used for the primary panels with complete success. (Primary panels may be fixed into place with common nails, routings, or channels, or with screws or double-headed nails.) It is obvious, after a consideration of the physical qualities of SUPER-Harbord, that its use for signs has many advantages.

SUPER-Harbord is a wood product easily shaped and fabricated by regular shop labor with common tools; expensive machine equipment and high scale out-of-shop specialty work is not necessary. The giant panels are light in weight, strong, flat, and smooth, but with ample "tooth," and sign paint made especially for application on wood covers quickly and with lasting and beautiful results.

Reflection may be controlled remarkably. The binder lines between the veneers act as moisture barriers to minimize the passage of paint disintegrating-moisture to the under side of the paint film. The **balanced** cross-banded construction stabilizes the panels, and hence warping is minimized.

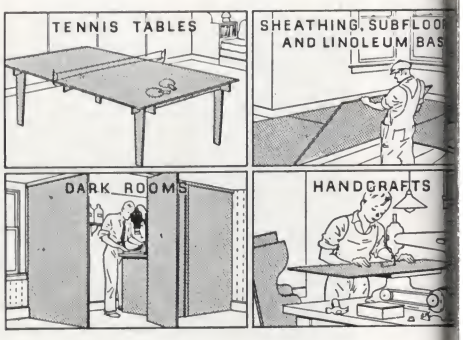
Readers, silhouettes, and appliques are easily shaped with scroll-, jig-, or band-saw. Free-standing three-dimension letters are made from the thicker stock without reinforcing, or if thinner material is required, it is braced with scraps of the Outdoor Plywood, with solid wood or metal channel.

In service the signs are not seriously dented by missiles, and scars may be easily painted over. Rolling and stretching in making reclaims is eliminated. SUPER-Harbord quickly demonstrates economy in initial and service costs, and its appreciation by the sign profession is increasing rapidly. (See page No. 11 for grades and sizes.)



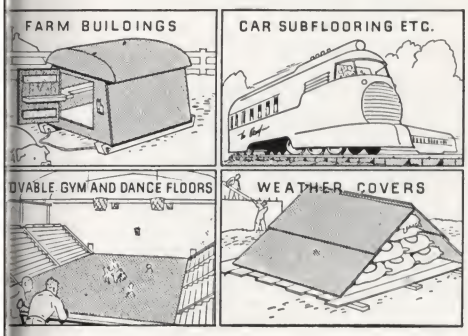
MANY

Space will not permit even cataloging of the multi-various uses of SUPER-Harbord in industry. Construction men appreciated it first, and from their use has spread the recognition of its values for numerous purposes. It has become regular features of incubators, re-



HARBORD

Harbord Plywood **(a soya bean base cold glue type available in all grades),** in the nearly fifteen years that it has been on the market, has come to be the standard for uniformity and high quality. It has established an enviable reputation because of its experienced and careful manufacture with precision machinery, operated by skilled craftsmen from selected materials; then it is carefully



USES

frigerator units, seed culture beds, specialized shipping containers, etc., and is used for wagon and wheelbarrow boxes, drying pallets, developing trays, cutting boards, toys, pickling vats, etc.—a great variety of articles that require SUPER-Harbord's unique characteristics.

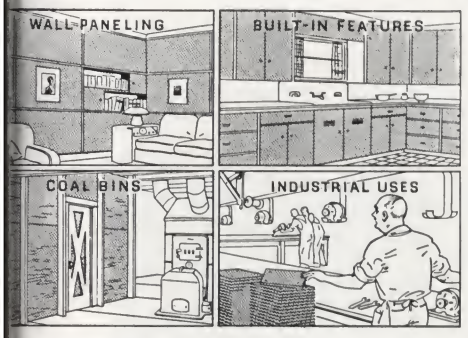
SUPER-*Harbord* FOR BOATS

Boat builders have long sought a material in panel form which may be used for permanent surfaces, and with qualities peculiarly suited to boat craftsmen. Now such a material is stocked in most domestic markets, or is available on short notice from distributors, and its dependability has been demonstrated on thousands of boats over several years of regular service. All over the country boat manufacturers, professional and amateur boat builders, and water-sports equipment makers are using SUPER-Harbord, the Outdoor Plywood. They use it for bottoms and sides, planking, decking, bulkheads, paneling, superstructure, etc. on various types of boats. It also fits the needs for surf boards and similar articles.

The waterproof characteristics of this unique plywood, together with the ease of shaping large units of it, suit it exactly to boat requirements.

Stock panels of SUPER-Harbord up to 5 x 12 ft. and in thicknesses from ⅛ in. to $1\frac{3}{16}$ in. are generally available, and larger and/or thicker sizes may be had to special order. The stock sizes fit the demands of small boats and features of larger ones. The grade suitable for boat work is known as Good 2 Sides, although the Good 1 Side grade may be used when only one side is to be exposed. Curvatures may be put into the panels to a limited extent while dry, but where necessary the panels may be steamed or soaked for bending to smaller arcs.

Marine screws, nails, and other non-corrosive hardware are used in conjunction with SUPER-Harbord. In fitting pieces of the plywood, it is best practice to carefully coat all edges and backs with marine lead or other caulking mastic and coatings. The exposed faces may be finished with marine paint or best spar varnish. (This protection is recommended as a preservative of the wood, and to assure long life, for while there is no hazard of delamination at the glue line, the wood fibres of the veneers have certain physical limits characteristics of the specie.)



PLYWOOD

graded and handled for shipment. Its use is recommended for construction features and other applications where it is protected from moisture and weathering. The greatest volume is used in the utility grades. Its strength and workability in all respects exceed that of panel boards not made of wood. Special literature devoted to this type of plywood and its uses is available.

A dramatic demonstration of SUPER-Harbord's ruggedness was made by the Nevills 1938 Colorado River Expedition. (See photo at top-right.) The three cataract-type boats used by the Expedition were constructed almost entirely of SUPER-Harboard. After the party had negotiated the 666 miles of the worst "white water" in the world, and subjected their boats to gruelling shocks and severe distorting stresses in the rapids, on lining jobs, and in making portage, Mr. Norman D. Nevills wrote: "There is not one leak or break in any of the three boats. . . . The boats were given thousands of tests — the surplus strength without useless bulk or dead weight of your SUPER-Harbord was demonstrated. Indeed, SUPER-Harbord is the ideal boat material, and has the stamina to 'take it'."

SUPER-Harbord was used as bottoms, sides, decks, bulkheads, seats, cowling, air chambers, etc. of three cataract type boats used by Nevills 1938 Colorado River Expedition.

SUPER-Harbord in fir and lauan were used as sides, deck, etc. on this stock model outboard motor type.

SUPER-Harbord is used by leading boat manufacturers. Thousands of SUPER-Harbord boats are rendering satisfactory service.

SUPER-Harbord is used by custom boat builders for principal features. The speed model at right exemplifies fine craftsmanship.

SUPER-Harbord is ideal material for amateur boat builders. The boy below proudly exhibits his SUPER-Harbord boat.

SUPER-Harbord contributes strength, appearance, and long service life to truck bodies.

SUPER-Harbord is used for subfloors, wall strengthening, decking, etc. by leading body builders.

SUPER-Harbord is widely used for better trailer bodies. This model is in natural SUPER-Harbord lauan, varnished.

SUPER-Harbord, because of its strength without useless bulk or dead weight, is widely used as railroad car lining and other features. Above is new type refrigerator car with SUPER-Harbord exterior and

8
19

SUPER-*Harbord* FOR TRUCK BODIES, TRAILERS, RAILROAD CARS

Strength Without Useless Bulk or Dead Weight

The extraordinary strength and absolute weatherproofness of SUPER-Harbord, coupled with its light weight, accounts for its general acceptance by informed builders of truck bodies, buses, house and cargo trailers, and railroad cars. The important shops serving the trade in their respective lines, after exhaustive tests and road service demonstrations, have made the guaranteed plywood standard specification. Leading custom builders have adopted SUPER-Harbord, and for a variety of transport types. Its fabrication and service characteristics have long since been adequately proven, and now the material with a performance record is available to all.

SUPER-Harbord is used for sides, decks, lining, and bulkheads, and while it is generally painted, varnished, or covered with fabric or other decorative material, its ruggedness and resistance to the disintegrating effects of moisture vapor and weather may be relied upon. Body builders and car-wrights have in this unique plywood a material which is worked and finished with common hand or power tools, and decorated with lasting beautiful results. SUPER-Harbord is fixed into place with glues, screws, bolts, rivets, and nails. It so strengthens the framework to which it is applied that its structural value often exceeds other considerations. Its rigidity and resistance to puncture is remarkable. Tolerance for expansion and contraction due to humidity or temperature changes is nil due to the cross-banded construction. The large panels, when applied, have a minimum lineal footage of joints which may be caulked to stop air or dust infiltration. Curved and flush features are designed for construction with this plywood with the assurance of its suitability. It has definite thermal insulation value, and this factor, together with its waterproofness, dictates its use particularly where temperature control is important—in refrigerator cars and trucks it has proven its worth. On passenger buses and the new streamlined railroad cars the industrial grades and sizes of SUPER-Harbord are used for subfloors, backing, and other structural features because of its strength, light weight, sound absorption qualities, and other characteristics. The panels made of lauan or other finish woods are used for interior decoration and service features.

SUPER-Harbord in fir, redwood, and lauan (Philippine Mahogany), of various sizes and grades, may be specified, depending upon the degree of strength and decorative value desired.

Noteworthy advances have quite recently been made in railroad refrigerator car design incorporating major specifications of SUPER-Harbord. This new type now in service utilizes the Outdoor Plywood for exterior covering (car siding), floors, lining, ice compartment bulkheads, and other important features. This recognition by the foremost car engineers of the numerous benefits of SUPER-Harbord presages economies not obtainable with any other material. Precedence and cost records were broken at once. Streamlined strength (SUPER-Harbord) replaces needless bulk and dead weight.

SUPER-Harbord is necessary specification for this dairy barn where humidity is high.

SUPER-Harbord FILLS VARIOUS NEEDS

Construction Closures

Temporary store fronts are often called upon to do service through periods of extremely wet weather or for an uncommon length of time. Where time or rains are anticipated, only SUPER-Harbord, the Outdoor Plywood, should be used. Plywood has many natural advantages for such work, including ease and speed of constructing into place, and decorating so as to contribute institutional good will and advertising value for the contractor and tenant. It has remarkable strength, and accordingly the safety factor of such closures is increased. When built of SUPER-Harbord, the structure may be left in place indefinitely, if necessary, and completely salvaged for re-use.

SUPER-Harbord is economical for job closures because of its weather resistance.

Store Fixtures

SUPER-Harbord has qualities in a class apart for cabinet making, particularly where the finished work is to be subjected to moisture or conditions that develop condensation. For flower, vegetable, fish, and wet goods display fixtures, counters, cooler rooms, humidity chambers and ducts, window backs, partitions, cutting tables, etc., the waterproof nature of the exclusive binder insures permanent service without hazard of glue line failure.

SUPER-Harbord is required for display fixtures for damp merchandise, such as the flower shop above.

Display Pieces

Display artisans cannot hazard a possible failure of the material of which their pieces are constructed, and they were quick, therefore, to recognize the worth of SUPER-Harbord. They appreciate it because of several unique qualities not found in any other material. The balanced cross-banded construction of this plywood assures uniform performance. It may be worked to fine detail, and nails or screws driven near the edges. Band saws and other cutting tools are not dulled, for silica or other abrasive substances are not used in making it. It may be steamed or wetted for bending, where necessary, and for sets in which the material is to subjected to moisture or weathering there is no substitute. It may be used in conjunction with all other display materials, including metals, plastics, fabrics, papers, paints, etc., and has remarkable structural strength for animated or spectaculars, and pieces involving public or property liability.

SUPER-Harbord is preferred for display pieces.

Unusual Interiors

For the lining of freezing rooms of refrigerating plants is one example of SUPER-Harbord's adaptability to the unusual. In such installations uncommon stresses are encountered, and in periods of shutdowns, moisture condensation occurs in places where most materials are vulnerable. Refrigerating engineers have available in this guaranteed plywood a material with the stamina to withstand conditions with which it may be subjected.

Another example of SUPER-Harbord's adaptability is its use as walls and ceilings of dairy and stock buildings. Such installations are subjected to periods of drying and humidity, and ordinary plywood should not be called upon to render long service. Humidity conditions in dairy buildings often cause serious misalignment of framing, and accordingly unusual precautions should be taken with the application of panels, and provision made for framework "movement." Only SUPER-Harbord, the Outdoor Plywood, should be used.

Other examples of the fitness of SUPER-Harbord for peculiar conditions are those encountered in tobacco sweating rooms, rehumidifying rooms, fruit dehydrating apparatus, etc.

SUPER-Harbord is used for covering and lining of dry kilns.

Convincing demonstrations of SUPER-Harbord's serviceability under extreme conditions are its uses in the construction of lumber dry kilns. A number of such kilns that are lined and covered with it have been rendering highly efficient service—kilns in which occur alternate cycles of humidity as high as 85%, and temperature to 200° F. to extremely low humidity and temperature below freezing. The guaranteed plywood's perfect performance record on "tough" jobs is convincing, indeed!

SUPER-Harbord for outdoor displays stands weathering.

PLYCRETE* (CONCRETE FORM PANELS)

*"Plycrete" is the generic trade name of the concrete form panel plywood manufactured by the Harbor Plywood Corp., available in two types: (1) SUPER-Harbord Plycrete, which is hot-pressed with an exclusive cresylic formaldehyde synthetic resin binder and tempered. (2) Harbord Plycrete, which is cold-pressed with a casein base type of cold glue.

Concrete form plywood carrying the Plycrete grade mark has the highest uniform performance record of any form material made. It has demonstrated its ruggedness on large and small jobs the nation over, and in many foreign countries. This use of the product is specialized upon by its manufacturers. The brand Plycrete is recognized by experienced engineers as a mark of known and predeterminable behavior. Panels are available in a choice of two types and values, each designed for specific service performance.

SUPER-*Harbord* Plycrete

The ultimate of form panel service may be expected of SUPER-Harbord Plycrete. The binder used in its manufacture is unapproached by any other made. It is insoluble even in boiling water, most common acids or alkali reaction developed in concrete setting. It holds the specially selected veneers in their cross-banded position permanently, and the panels made with it may be re-used to complete physical destruction without hazard of failure at the binder line. The extra thickness of the choice face veneers bonded with this exclusive binder assures maximum service use until the panels have been completely destroyed by abrasion, abuse, or cut up into uneconomic units. Extra smooth faces characterize the face veneers. There is no alternate for SUPER-Harbord Plycrete where freight, handling, or fabrication costs are high, where climatic humidity is excessive, or where maximum re-use is required. On standardized multi-use or interchangeable form units it is almost universally used. The panels are edge-branded "SUPER-Harbord Plycrete."

Harbord Plycrete

U. S. Commercial standards (CS45-36 and the revision for '38) designate a special grade of concrete form plywood to be manufactured with a highly water resistant cold glue; certain veneer specifications are included. Harbord Plycrete meets such specifications, and is competitive in price to all panels of the grade and class; yet the same integrity and responsibility, careful choice of materials and precision manufacture that characterize the complete Harbord line are "ingredients" of this grade-marked, trade-marked type. Harbord Plycrete may be expected to render limited re-use service. It is a "closed" specification by engineers who calculate the cost-per-square-foot-of form-service on jobs where the panels are to be amortized on one project.

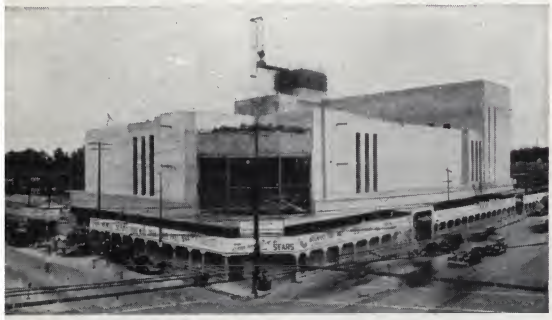
Briefly: Concrete form plywood should be specified by trade name as follows: (1) For maximum re-use as sheathing and/or lining—SUPER-Harbord Plycrete. Fifteen or more re-uses are common service. (2) For limited re-use as sheathing and/or lining—Harbord Plycrete. Eight or more reuses are common. Salvage may be expected on both types beyond that for ordinary form materials.

Plycrete panels are edge sealed with resin-aluminum sealer with a distinctive silver blue tint, to seal end grain and assure greater re-use. Factory treating with special form oil or other material at buyer's option.

Above shows construction progress of job making typical re-use of Plycrete.

Plycrete is required for fine architectural concrete.

Plycrete renders repeat re-use on large and small work.



Plycrete is regular specification of informed contractors.

Plycrete is used on important structural and architectural concrete projects the world over.

TABLE OF SUPER-Harbord STANDARD SIZES

Item	Widths	Lengths	Thicknesses
Stock Panels	From 12", increasing by 2-in. units to 30"; also 36", 42", 48" and 60"	48", 60", 72", 84", 96", 108", 120" and 144"	1/8" (3-ply sanded 2 sides) increasing by 1/16" thicknesses to 1 3/16" (9-ply)

Heavier thicknesses, wider widths, and longer lengths to order. Information on request. (See U. S. Commercial Standards CS45-38.)

Physical appearance of SUPER-Harbord is similar to that of regular Douglas Fir plywood grades—same appearance grading rules are used, except as applies to automobile and industrial stock. (See U. S. Commercial Standards CS45-36 and revisions now being made to be published as CS45-38).

EXPANSION AND BUCKLING TESTS ON SUPER-Harbord

Expansion

Relative Humidity		
25%	. . . . .	starting
60%	. . . . .	0.06%
90%	. . . . .	0.12%
100%	. . . . .	0.15%

Buckling Characteristics

Measurements taken on 40x48 in. specimens rigidly attached to steel framing subjected to a 97% relative humidity at 90° F. for a period of two weeks. 1½", 5 ply specimens. Results: The maximum rise of surface = 0.06 in.

GRADES According to National Bureau of Standards CS45-38

Good Two Sides (G-2-S)—This grade is intended for natural or light stain finishes. Both faces are clear and 100% heartwood of a yellow or pinkish color.

Good One Side (G-1-S)—One face is the same as that described under Good Two Sides grade, while the opposite face is the same as the Sound Two Sides grade described below.

Sound Two Sides (SO-2-S)—This grade presents a smooth, sound surface on both sides suitable for painting. The faces may be of one or more pieces of firm, smoothly cut veneer. If of more than one piece, they will be well-joined and reasonably matched for grain and color at the joints. Sap and natural discoloration are considered no defect.

Wallboard (W-B)—The face side is the same as described under Sound Two Sides. The opposite side contains defects in number and size that will not affect the strength or serviceability of the panel.

Sheathing (SH)—This is unsanded and made only in following sizes: thicknesses 5/16" and 3/8", 3-ply; 5/8" 3 or 5-ply; Widths 32" and 48"; Length 96". One face shall present a solid surface except that it permits of small knot holes and thin splits. Sheathing panels are scored or marked for nailing.

Concrete Form Material—(Made in standard panel dimensions with special highly water-resistant glue). 5/8-in. thickness is recommended for most form jobs, but ½-in., 9/16-in., 11/16-in. and ¾-in. panels are stocked in standard panel widths and lengths. Both faces are carefully selected and sanded so that concrete surfaces will be smooth and true, thus eliminating costly rubbing labor. When specified, panels will be mill-treated with special water-repellent oil at nominal cost. Panels ¼-in. thick are available as form liners and for curved surfaces.

Automobile and Industrial Stock—(Rough). In ½-in. to 7/8-in. thicknesses. Faces are free from knot-holes, but tight knots are admitted.

Explanation

Substituting S01S for Wallboard grade in all stock thicknesses. Industrial grade is same as S02S.

MODULUS OF ELASTICITY DATA ON SUPER-Harbord

Procedure for Modulus of Elasticity Tests

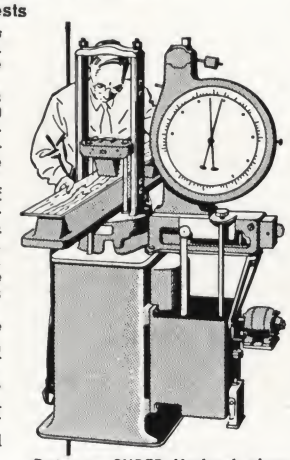
Selection of Samples—Eighty samples of each construction of plywood to be tested were cut 4x20 in. Forty samples had the face grain running the length of the test piece, and 40 samples had the face grain running the width of the test piece.

Treatment of Samples—No sealer or oil treatment of any kind was used to retard the moisture absorption of the plywood. Of each 40 samples, 10 were tested in the condition they came from the warehouse, 10 were tested after 24 hours soaking in water at room temperature (70° F.), 10 were tested after 48 hours soaking and 10 were tested after 72 hours soaking.

Tests—The modulus of elasticity was figured from the deflection of the plywood used as a simple beam having free ends and a concentrated load at the center of the span. All 3-ply plywood was tested on a 10-in. span and 5 and 7-ply plywood was tested on a 16-in. span. All tested pieces were measured for thickness to the nearest .001 in. Deflection data was taken for four loadings on each sample and the maximum load did not exceed one-half of the ultimate load. Deflections were measured to the .001 in.

Calculations—The modulus of elasticity was calculated from the formula: $E = \frac{Wl^3}{fI48}$ where f equals the deflection of W pounds and I equals $\frac{bd^3}{12}$ where d is the entire thickness of the test sample. The modulus of rupture was calculated from the formula: $s = \frac{Mc}{I}$ and I equals $\frac{bd^3}{12}$ where d is the entire thickness of the test sample and $M = \frac{Wl}{4}$ where W is the ultimate load.

Note: It will be noted in some cases that the moduli of elasticity were slightly higher than the preceding test when they should have been slightly lower. This is due to different percentages of end grain in the face ply and the fact that wood is not a homogenous material.



Data on SUPER-Harbord given here is result of actual tests made in Company's laboratory. Data given in this comparison is for dry panels in all instances.

Table A shows a comparison of the modulus of elasticity for different thicknesses of regular concrete form panels as compared with the same thickness of SUPER-Harbord. The values for regular concrete form panels are computed from data supplied by the Douglas Fir Plywood Assn.

Results of Modulus of Elasticity Tests on SUPER-Harbord

Table A Thickness	Modulus Elasticity for Regular Concrete Form Panels	Modulus Elasticity for SUPER-Harbord
¼ in.	1,412,000	2,405,000
½ in.	1,152,000	1,503,300
¾ in.	947,000	1,240,400

¼ IN. SUPER-Harbord—Construction 3-ply

Treatment	Direction of Face Grain	Moisture Content	Modulus of Elasticity	Modulus of Rupture
A	‖	7.1%	2,405,000	15,200
B	‖	32.8%	1,719,500	9,090
C	‖	39.8%	1,959,300	8,240
D	‖	48.5%	1,409,300	8,340
A	⊥	10.4%	210,860	3,870
B	⊥	29.7%	226,450	3,920
C	⊥	43.0%	225,450	3,130
D	⊥	45.9%	188,430	2,880

½ IN. SUPER-Harbord—Construction 5-ply

Treatment	Direction of Face Grain	Moisture Content	Modulus of Elasticity	Modulus of Rupture
A	‖	7.6%	1,503,300	8,610
B	‖	30.9%	1,215,000	6,660
C	‖	35.1%	1,155,000	7,092
D	‖	37.4%	1,160,000	6,320
A	⊥	8.2%	721,500	6,840
B	⊥	25.0%	623,200	5,920
C	⊥	35.5%	601,600	4,970
D	⊥	37.4%	626,200	4,760

¾ IN. SUPER-Harbord—Construction 7-ply

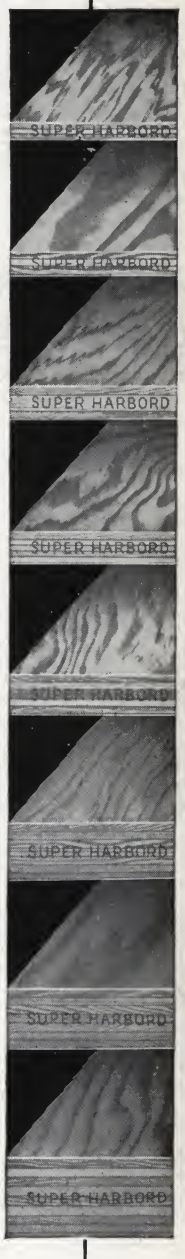
Treatment	Direction of Face Grain	Moisture Content	Modulus of Elasticity	Modulus of Rupture
A	‖	8.3%	1,240,400	8,580
B	‖	24.8%	962,300	6,510
C	‖	30.7%	979,700	6,060
D	‖	34.7%	944,500	5,520
A	⊥	8.1%	599,650	5,840
B	⊥	26.7%	563,500	6,140
C	⊥	30.7%	494,200	5,120
D	⊥	33.7%	482,800	5,070

Note: In design of concrete forms, stresses given for 72-hour soaking period should be used.

Legend: ‖—Parallel to span. ⊥—Perpendicular to span. A—Dry. B—24 hrs. soaking. C—48 hrs. soaking. D—72 hrs. soaking.

Special informative bulletins are available from the Company on various uses of their products. A fully staffed Department of Research and Engineering is maintained at the General Office for unusual problems. The Company is a member of the Douglas Fir Plywood Association, Fir Door Institute, and other trade organizations.

Representative Plies and Thicknesses of SUPER-HARBORD



3-ply—5/16 in.
Used largely for bending, light industrial work, trailers, toys, cut-outs, display, boat features, etc. Stocked in fir, redwood, and lauan, in panels up to 4x8 ft., larger on special order.

3-ply—¼ in.
A popular thickness, used for great variety of work. May be bent for curved linings, fixtures, etc. Stocked in fir, redwood, and lauan, in panels up to 5x12 ft., larger on special order.

3-ply—⅜ in.
(5-ply mill option)
A popular thickness, used for signs, truck bodies, boats, exterior paneling, and features of buildings; for heavy curved linings, etc.

5-ply—½ in.
A popular thickness, used for signs, truck bodies, boats, trailers, exterior paneling and siding, variety of industrial uses, etc. Stocked in fir, redwood, and lauan, in panels up to 5x12 ft., larger on special order.

5-ply—⅝ in.
A popular thickness, used for signs, truck bodies, boats, trailers, exterior paneling and siding; for form sheathing, a variety of industrials, etc. Stocked in fir, redwood, and lauan.

5-ply—¾ in.
(7-ply mill option)
A popular thickness, used for signs, truck bodies, bulkheads, exterior paneling and siding; for form sheathing, motor mountings, and other industrials; for cold room closures, etc. Stocked in fir, redwood, and lauan.

7-ply—⅞ in.
(9-ply mill option)
A thickness used for cut-out signs, truck and trailer flooring, industrial reinforcing, etc. Available in fir, redwood, and lauan, in panels up to 5x12 ft., larger on special order.

9-ply—1 3/16 in.
(11-ply mill option)
An industrial item, also used for cut-out letters, boat transoms, car bulkheads, etc. Available in fir, redwood, and lauan, in panels up to 5x12 ft., larger on special order.

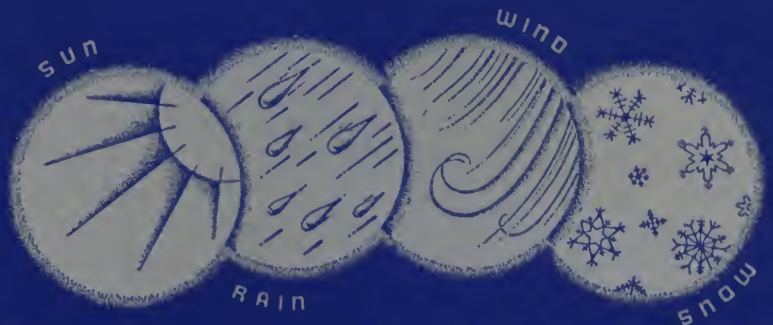
Representatives of this Company are prepared to render valuable counsel on concrete form projects. A Research and Engineering staff is available at the General Office. Special informative bulletins are available upon request.

See National Bureau of Standards (CS45-38) performance recommendations for exterior plywood. The specifications are regarded as **minimum** performance for SUPER-Harbord.

MEMBER · DOUGLAS FIR PLYWOOD ASSOCIATION · dfpa

SUPER-Harbord

THE OUTDOOR PLYWOOD



NO WEATHER MADE CAN HARM THIS PLYWOOD

HARBOR PLYWOOD CORPORATION

Mills and General Offices: Hoquiam, Washington

DISTRIBUTING WAREHOUSES: Atlanta, Baltimore, Chicago, Cincinnati, Cleveland, Columbus, Indianapolis, Jacksonville, Los Angeles, Louisville, Milwaukee, New Orleans, Philadelphia, Pittsburgh, San Francisco, Toledo, Washington, D. C.

REPRESENTATIVES: Billings, Denver, Kansas City, Omaha, Worcester.

THE RESINOUS PRODUCTS & CHEMICAL CO., INC.

222 West Washington Square, PHILADELPHIA, PA.

Makers of Tego Film for Completely Weatherproof Structural

TEGO-BONDED
PLYWOOD

Nature of Material

Tego-bonded plywood is characterized by the use of a synthetic resin film laid between sheets of dry veneer and set in a hot press with controlled heat, pressure and time. This process fuses the Tego into the adjacent wood layers, resulting in inseparable plywood panels of extraordinary strength and extreme durability. Plywood is much lighter than solid wood of the same strength. The alternate cross laid sheets distribute the plywood strength and overcome normal wood weaknesses.

Schwartz Restaurant, New York, N. Y.
With Tego-bonded paneling by U. S. Plywood Co.

Properties and Working Characteristics

The Tego film bond is entirely insoluble in cold or boiling water, chemically inert, repellent to fungi and insect pests, and retards decay. Its waterproof quality has greatly widened the field in which plywood is advantageously used. It is stronger than the wood itself and exceeds the rigid requirements of U. S. Army and Navy specifications. Tego plywood works as easily as ordinary wood and may be made and used in flat or curved shapes. May be combined with metal, asbestos, insulating boards, and the like. Especially adapted to fine finishes.

Gunnison House of Tego Plywood, Louisville, Ky.
This house stood in flood waters and was entirely sound afterward

Uses of Tego-bonded Plywood

Structural—Concrete forms, fixed enclosures and movable partitions, sheathing, flooring, roofing, ceilings and prefabricated units.

Industrial—Bins, chutes, conveyors, cabinets, lockers, signs, foundry patterns, electrical equipment, etc.

Decorative—Store fronts, elevator cab linings, paneling, counter fronts, furniture, radio cabinets, musical instruments and trays.

Transportation—Aircraft, ships and boats, auto trucks and trailers, busses and railroad cars.

Sizes, Grades and Specifications

Obtainable in a wide range of grades, constructions and sizes, from 3-ply 1/32 in. to multiple ply 7/8 in. and thicker. Standard stock sizes available up to 48x96 in. and special custom sizes to 84x144 in. Face grain runs lengthwise, except where otherwise specified.

Suggested Specifications — .... inch (*thickness*), ...-ply....(*species*) plywood of....(*grade*), for.... (*use*). All plywood to be dry bonded with Tego resin film under heat and pressure.

For sources of local supply or technical data, write direct to address above.

UNITED STATES PLYWOOD CORPORATION

Manufacturers of Plywood and Allied Products

EXECUTIVE OFFICES
616 West 46th Street, NEW YORK, N. Y.

BRANCH OFFICES AND WAREHOUSES

BALTIMORE, MD.
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SAN FRANCISCO, CALIF.
SEATTLE, WASH.

SHOWROOMS

NEW YORK, N. Y., Architects Sample Corporation
CHICAGO, ILL., Merchandise Mart

MILLS: ALGOMA, WIS.; BIRCHWOOD, WIS.; SEATTLE, WASH.; ORANGEBURG, S. C.

PRODUCTS

WELDWOOD—Waterproof plywood.

WELDBORD—All-hardwood plywood wallboard.

DOUGLAS FIR PLYWOOD—Concrete Form Fir, Plyscord Sheathing, Rezited Fir.

HARDWOOD PLYWOOD.

ALGONITE—Fine veneers welded to Masonite.

ARCHITECTURAL PLYWOOD.

CURVED PLYWOOD.

PLYWOOD MOLDED—PEWS AND SEATS.

ARMORPLY—Metal-covered plywood.

FLEXWOOD—Thin veneers on fabric (see file index).

MICARTA—(See file index for Westinghouse pages).

J-M FLUSH DOORS—(See file index for Johns-Manville pages).

DRY-WALL—Construction.

UNITED STATES PLYWOOD CORPORATION is the world's largest producer and marketer of Plywood and allied products. With warehouses in fourteen of the country's leading industrial centers and mills in close proximity to the finest stands of timber on the continent, we are in a position to supply every type of stock panel or any construction to architectural specifications which may be required anywhere in the country.

WELDWOOD

Waterproof Plywood—Hot-press phenol-formaldehyde resin bonded—unqualifiedly guaranteed for the life of the structure in which it is installed.

Uses—For all hardwood installations; specially recommended for fabricating crotch, butt and fancy veneers as it minimizes surface checking; for general outdoor use: siding, farm buildings, outhouses, garages, outdoor signs, boat-buildings, etc.

Available in Douglas Fir, Birch, Walnut and Mahogany from stock, and in all other woods on special order.

Thicknesses—Fir, by 1/8's from 1/8 to 3/4 in. Hardwood, by 1/16's from 1/4 to 7/8 in. Special constructions from 1/64 in. to any thickness.

Sheet Sizes—Fir, standard size, 48 x 96 in.; also available from stock in 10 and 12-ft. lengths; from mill, up to 6 x 12 ft.—longer lengths with scarf joints.

Hardwoods, standard sizes 36 x 72 and 48 x 96 in.; from mill, in particularly any size.

WELDBORD

All-Hardwood Wallboard—The lowest-priced all-hardwood panel ever produced.

Uses—Paneling, for walls and ceiling, built-ins, cabinets and temporary outdoor installations.

Thicknesses—1/4 in. only.

Sheet Sizes—96 x 48, 84 x 48 and 72 x 48 in.

Available in Two Types—(A) *Blue Label:* highly water-resistant, hot-press modified resin glue. (B) *Red Label:* absolutely waterproof hot-press resin glue.

Structural Qualities—Fabricated with grain running short way of panel for extra stiffness between centers and to minimize movement through variations in humidity.

Finishing Properties—Paints perfectly without grain-raise or surface checking; takes excellent Walnut or Mahogany stain; ideal base for wallpaper. Close grain of faces assures economical paint spread.

DOUGLAS FIR PLYWOOD

Plant—Seattle, Wash.

Capacity—120,000,000 sq. ft. per annum on 1/4-in. basis.

Thicknesses—By 1/8's from 1/8 to 2-in.

Panel Sizes—Up to 6 x 12 ft.

Good Two Sides

Uses—Door and partition panels.

Glue—Soya bean—water resistant.

Good One Side and Sound Two Sides

Uses—Low cost interior trim, built-ins, wall and ceiling paneling, temporary outdoor requirements.

Glue—Soya bean—water resistant.

Wallboard Grade

Uses—Same as S2S but where only one sound face is required.

Glue—Soya bean—water resistant.

Plyscord Sheathing

Uses—Stronger, stiffer, more economical than ordinary diagonal sheathing. Scored on faces on 16-in. centers for quick placing of studs for nailing.

Glue—Soya bean—water-resistant.

Concrete Form Fir

Uses—All concrete work. Produces smooth, thinless concrete requiring minimum amount of finishing. Saves labor and material costs in form-building. Panels may be taken down and re-used repeatedly.

Glue—Special highly water-resistant.

Oil-Treated—May be obtained from mill with special water-repellent oil treatment on faces or may be treated with Form Oil on the job.

Rezited Fir

For smooth finishing by painting, staining or papering. Panels are sealed on faces and edges with clear resin sealer to minimize grain-raising and surface checking. Sealer acts as priming coat and therefore reduces finished cost.

Table Tennis Tops

Ready-to-finish tops in 3/8, 1/2, 5/8 and 3/4-in. thicknesses. One piece 60 x 108 in. or halves 60 x 54 in. for hinging.

HARDWOOD PLYWOOD

Mills—Algoma, Wis., Birchwood, Wis., Orangeburg, S. C.

Production—All types of hardwood plywood, in all constructions, with faces of any domestic or imported veneer.

Glues—Casein, Phenol-Formaldehyde Resin, Blood Albumen, Vegetable.

Uses—Interior trim and cabinet work, furniture, etc.

Stocks—Wide variety of sizes and thicknesses in all woods—foreign and domestic. Matched sets of deluxe panels faced with unusual veneers, such as burl and crotch walnut, Sapele Mahogany, Brazilian Rosewood, Rift Sawn Oak, Quartered Figured Gum, Knotty Western Cedar, Knotty Idaho White Pine, Orientalwood, etc.

ALGONITE

Fine veneers welded to Masonite. Available in large sheets for economical installations.

Can be erected in curves without special treatment of panels.

Faces—Veneers of thirty-nine domestic and imported woods.

ARCHITECTURAL PLYWOOD

To architects' specifications.

CURVED PLYWOOD

To sketch, in all woods and constructions. Stock moulds available for many special effects.

CONTINUOUS SEAT-AND-PEW BACKS

Standard moulds in several designs. Lengths to meet the requirements of any special installation.

ARMORPLY

Metal-covered plywood.

Stocks in 1/4 and 3/8-in. thicknesses, galvanneal steel one and two sides. Can be manufactured to specifications with any metal facing or with metal core for light weight, warp-proof sliding doors, and with face metal drawn around edges and sealed to back.

FLEXWOOD

Thin veneers of domestic and imported woods mounted on fabric for direct wall application. Can be applied over any smooth surface. (See file index for page number.)

MICARTA

Laminated Bakelite sheets, a product of Westinghouse Electric & Mfg. Company. In wide range of standard and high colors for paneling, counter, table and furniture tops.

Durawood—Micarta, in natural wood finish.

Resinarta—Sprayed Micarta baked on Presdwood. (See file index for Westinghouse pages).

J-M FLUSH DOORS

Aeroplane-type box girder construction.

Warp-resistant—light weight.

"Wel-Built" Type—Rotary gum faces, a quality door at a competitive price; vegetable glued.

J-M Birch Door—Birch faces for high class interiors; casein water-resistant glued.

J-M Deluxe Exterior Birch Door—One of the finest wood-faced doors on the market, hot-press resin glued.

J-M Flexboard Door—Same as Deluxe Door but faced with Flexboard, hot-press resin glued. (See file index for Johns-Manville page).

DRY-WALL CONSTRUCTION

United States Plywood Corporation products are particularly well suited for modern dry-wall construction. With Weldwood for siding, Plyscord for sheathing and any of the United States Plywood products for interior paneling, material, labor and time are saved in erection and tremendous economies affected in maintenance charges.

The Dry-Wall House is void of cracks. Insulation is far more effective and durable. Interior walls and ceiling cannot crack or chip.

Interiors can be of Fir Weldbord or any of the fine hardwoods, selection depending only on the taste and budget requirements.

WHEELER OSGOOD SALES CORPORATION

MANUFACTURERS OF

Plywood Specialties, Wallboard, Plyform, Plyscord and the Country's Most Complete Line of Doors

FACTORY

TACOMA, WASHINGTON

GENERAL SALES OFFICES, 122 So. Michigan Ave., CHICAGO, ILL.

For Wheeler Osgood Doors, see File Index

THE COMPANY

There is more than half a century's experience behind Wheeler Osgood products—the introduction of laminated products was pioneered by Wheeler Osgood. Modern equipment and methods, and exceptional production capacity have won world-wide recognition for Laminex Plywood. The factory is located close to the huge Douglas Fir Forest from which specially selected virgin growth timber is obtained.

The Wheeler Osgood laboratory for research and development has created many added efficiencies and improvements, such as the famous Laminex Water-resistant Glue.

Connections of long standing assure an adequate supply of Philippine Hardwood to complete line of products now offered.

ALL STANDARD GRADES

All standard grades of Douglas Fir Plywood are manufactured by Wheeler Osgood, and are available in standard stock sizes. Special sizes, thicknesses, number of plys and various species of wood may be obtained on specification.

LAMINEX PLYWOOD ENGINEERED LUMBER

Laminex Douglas Fir Plywood is engineered lumber built up of three or more layers, each one cross-grained to the next. These layers are scientifically dried to give uniform moisture content. Bonded together by Laminex water-resistant cement, a joint stronger than the board itself is provided. Light in weight, Laminex Plywood is tough and strong—actually stronger than steel, pound for pound. A glass-smooth surface is provided which eliminates the necessity of priming or filling for any finish.

Resin-sealed Laminex plywood (a Wheeler Osgood improvement which greatly enhances the appearance and usefulness of this material) is also available, on special order. Expertly applied, the clear resin sealer increases the control of the moisture content. Grain raising and hair checking is practically eliminated. The Laminex resin sealer improves the final finishing, whether paint, enamel or clear lacquer is used.

SIZES

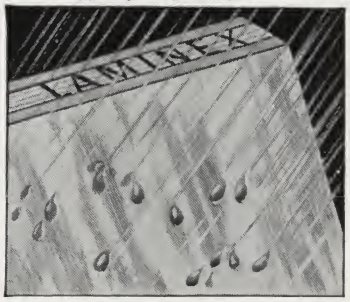
All standard stock sizes up to 4′x8′ available. Larger sizes may be obtained when specified. Thicknesses range from $\frac{3}{16}$″ up to 1½″ including: ¼″, ⅜″, ½″, ⅝″, and ¾″.

LAMINEX PLYWOOD SPECIALTIES

Philippine Mahogany Laminex

This aristocrat of Plywoods combines exceptional beauty of ribbon-grain Philippine mahogany with the structural advantages of standard plywood. The Douglas Fir core and back provide maximum strength and exceptional workability. The possibility of warping, cracking, shrinking or swelling is eliminated. Laminex construction provides high resistance to the effects of air conditioning. The Philippine Mahogany ply is bonded to the Douglas Fir core by the same process which has been so successfully used in the manufacture of other well-known Laminex products. Beautiful finishes may be obtained in any of the shades from natural or light oak to walnut and the deep mahogany red. Available in standard and special sizes.

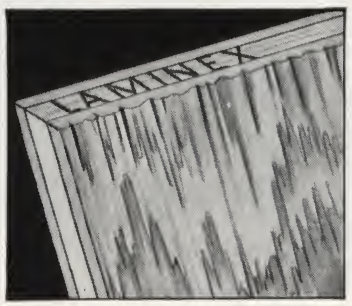
All-Weather Laminex



All-Weather Laminex may be safely used for *all* outside purposes, in numerous types of structures and hundreds of products exposed to the elements. It retains its solid structure even under pressure. The surface resists shrinking and swelling and will not mar or dent easily. The hot plate process by which All-Weather Laminex is manufactured, creates a glass-smooth surface. Grain raising and hair checking are minimized. It provides an excellent surface where paint, stain and plastic finishes are to be used. The use of a resin binder provides immunity to the effects of weathering. Temperature and moisture changes do not cause springing or separation of plies. All-weather is available in all standard sizes and plies.

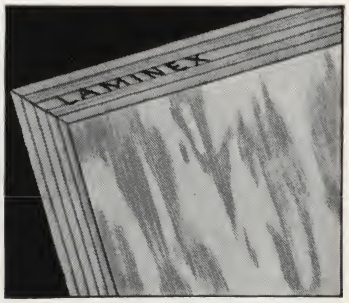
Etched-Wood Laminex

Etched-Wood Laminex answers the demand for a material which provides more attractive and artistic treatment of walls and ceilings without adding the penalty of greatly increased cost. The beautiful, natural pattern of the wood is brought out *in relief* by a special process of grain etching. The rugged surface of etched wood provides a strikingly "different" paneling treatment for homes, cottages, taverns, clubs, etc. Etched Wood Paneling has all the advantages of standard Laminex Plywood and is available in standard sizes.



Plyform Laminex

Wherever lumber has been used for the old method of building concrete forms—Laminex Plyform can give a better, more economical form. Each panel is sanded to perfect smoothness and will be treated to make it water repellent when so specified. Because of its exceptional strength, Plyform Laminex can be used over and over again. Special Laminex Water Resistant Cement binds the cross-grained layers, making a joint actually stronger than the board itself, assuring permanent strength. The large size panels of Laminex Plyform, accurately cut to size with tight-fitting joints, provides a smoother, concrete surface with a minimum of fins. General labor cost can be reduced by 20% to 40%. Plyform is a superior form lining for round corners, reverse molds, and difficult offsets. The large, light-weight units mean easy stripping and faster handling. Laminex Plyform is available in intermediate sizes under 4′ x 8′ or larger, when specified. Thicknesses are ½″, $\frac{9}{16}$″, ⅝″ and ¾″. Weights per thousand square feet are ½″, 1525 lbs.; $\frac{9}{16}$″, 1675 lbs.; ⅝″, 1825 lbs.; ¾″, 2225 lbs.

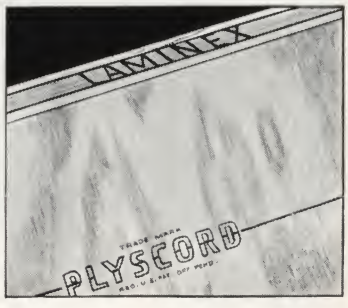


Plyscord Laminex

Laminex Plyscord is the improved sheathing product which provides unusual construction economies. Because it is scored, it can be nailed to studs quicker and more easily. Cutting and fitting time is greatly reduced. Less nailing is needed than when other sheathing materials are used. There is approximately 50% saving in nails alone.

Plyscord Laminex sheathing is several times more rigid than ordinary horizontal sheathing. Walls are warmer, stronger, windproof, when Laminex Plyscord is used and yet it does not seal moisture in the walls. Available in 32″ and 48″ widths, 8′ lengths and in thicknesses of $\frac{5}{16}$″, ⅜″ and ⅝″. It is easier and faster to handle.

Wheeler Osgood provides a special plywood service to architects, contractors, builders. Samples and further information are furnished on request.



THE UNION METAL MANUFACTURING CO.

GENERAL OFFICES AND FACTORY
CANTON, OHIO

SALES OFFICES

ATLANTA, GA. BOSTON, MASS. LOS ANGELES, CAL. BALTIMORE, MD.
CHICAGO, ILL. NEW YORK, N. Y. SAN FRANCISCO, CAL.

Products

UNION METAL COLUMNS and PILASTERS.

Also manufacturers of Exterior Lighting Fixtures and Tapered Steel Shells for Cast-in-Place Pile.

UNION METAL
FLUTED STEEL PRODUCTS

Stock and Special Designs

Ten classical designs are shown herewith.

Our portfolio of designs and installations shows many buildings where our columns have been used and a large number of attractive Colonial entrances. Also an attractive line of garden pergolas.

Write for combined column and pergola Catalog No. 50-H.

Advantages of Union Metal Columns

(1) Architecturally correct.
(2) Clean cut, highly ornamental and stately.
(3) Will not rot, check or open at joints.
(4) Pressed steel construction eliminates all glues and fillers.
(5) Fireproof and weatherproof.
(6) Have entasis and stopped flutes.
(7) Not experimental, but used on thousands of representative buildings in the United States and abroad.
(8) Indestructible and will outlast the buildings; suitable for all climates and temperatures.
(9) Easily handled, transported and erected.

Load-bearing Formulae

(Result of tests made by Robert W. Hunt & Co.).

Applies to designs, Numbers 240, 246, 212, 213, 219, 224, 230, 237 and 222.

For 1-ply, 22 gauge shaft:
460 x top diameter in inches equals .... pounds dead load.

For 2-ply 22 gauge shaft:
860 x top diameter in inches equals .... pounds dead load.

Example: 12-in. diameter column tapering to 10-in. top diameter—

1-ply shaft: $460 \times 10 = 4600$ pounds dead load.
2-ply shaft: $860 \times 10 = 8600$ pounds dead load.

Note: When designs using composition capitals are ordered and are expected to carry an unusually heavy weight, this should be explained to us so that a heavier core band than ordinarily furnished will be supplied for inside the capital.

Load-bearing Formula for Design Number 700

For 1-ply, 22 gauge shaft:
1250 x top diameter in inches equals .... pounds dead load.

For 2-ply 22 gauge shaft:
2000 x top diameter in inches equals .... pounds dead load:

Example: Number 700 column, 12-in. tapering to 9-in. top diameter—

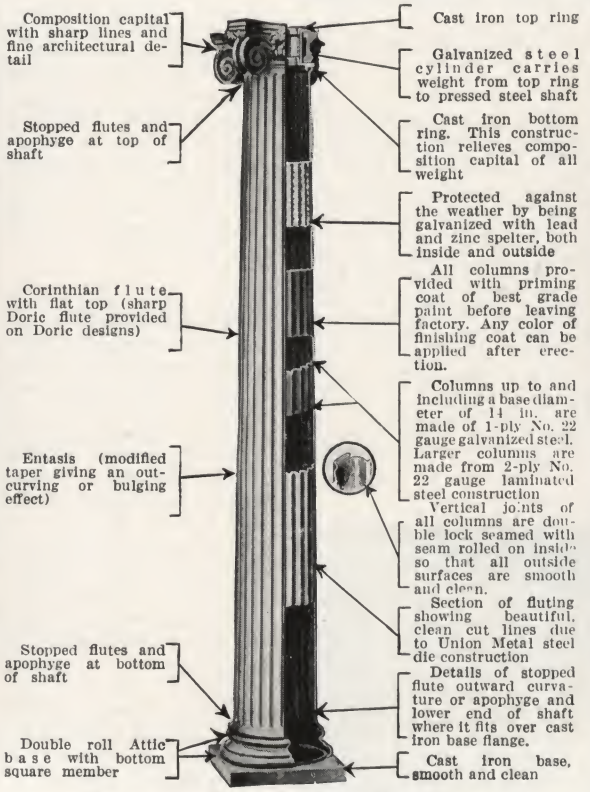
1-ply shaft: $1250 \times 9 = 11{,}250$ pounds dead load.
2-ply shaft: $2000 \times 9 = 18{,}000$ pounds dead load.

A safety factor of 2 is recommended.

Standard practice is to furnish columns up to and including 14-in. diameter with 1-ply shaft, but when desired, 2-ply can be furnished at an increase in price. All columns larger than 14-in. diameter are furnished 2-ply, 22 gauge shaft.

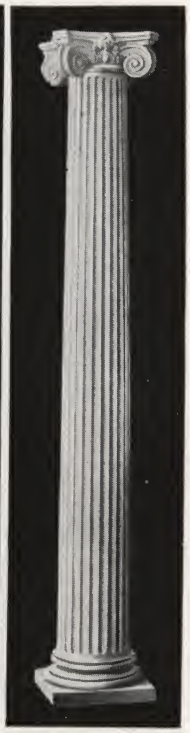
Design 212
Roman
Corinthian

Design 230
Greek
Ionic



Construction Details of Union Metal Columns

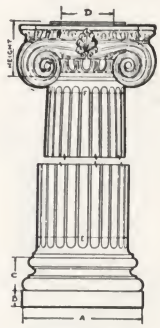
Design 237
Modern
Ionic



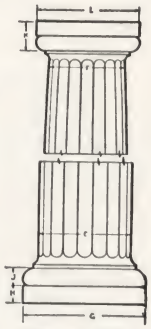
Design 222
Italian
Ionic
(Scamozzi)

Architects' Specification

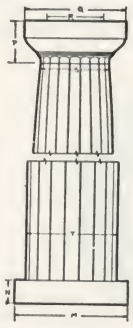
The fluted columns used shall be Union Metal Pressed Steel Columns with entasis and stopped flutes, manufactured by THE UNION METAL MANUFACTURING CO., *Canton, Ohio.* The design number, style and size of columns to be used are indicated on drawings. The manufacturer shall apply a priming coat of high grade paint to all columns before shipment from his plant.



Comp. Cap. Designs 212, 230, 237, 222, 213, 219, 224



Designs 240 and 246

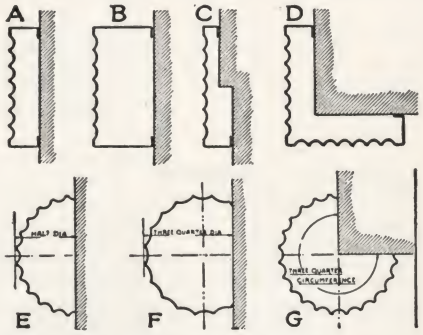


Design 700

Pilasters and Odd Shaped Columns

We can furnish flat and corner metal pilasters and half-round and three-quarter round metal columns in all sizes to match stock or special designs of Union Metal Columns.

A—Quarter return pilaster
B—Half return pilaster
C—Unequal return pilaster
D—Quarter return corner pilaster
E—Half column
F—Three-quarter column
G—Three-quarter corner column



Union Metal Pilasters and Odd Shaped Columns

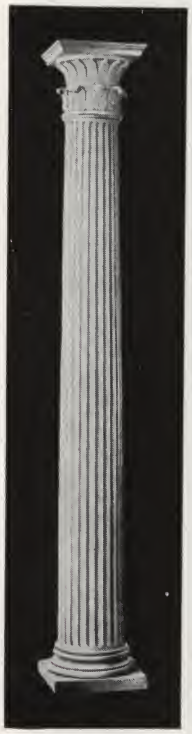
When ordering pilasters, specify whether face shall be tapered to match columns or whether face shall be straight from top to bottom. Unless otherwise ordered, bottom and top faces of pilasters will be furnished same as bottom and top diameters of columns, in which case pilaster bases and caps will match those of columns. All Union Metal pilasters are fluted on front face to match columns but are not fluted on return faces without extra cost. Pilasters are not provided with entasis.

Dimension Chart of Union Metal Columns

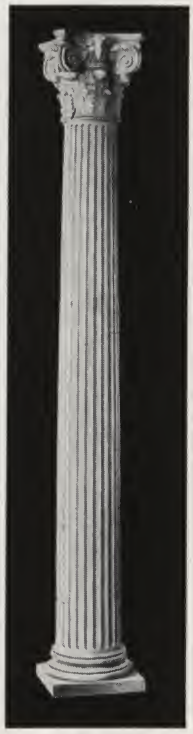
DIMENSIONS OF UNION METAL COLUMNS

Bott. Dia. of Shaft	Designs No. 212, 230, 237, 222, 213, 219 and 224													Design No. 240					Design No. 246						Design No. 700						
	A	B	C	D	E	F	Height of Capital							G	H	J	K	L	G	H	J	K	L	R	M	N	P	Q	R	S	T
							212	230	237	222	213	219	224																		
8	10 5/8	1 5/16	3	3 1/2	8	6 1/2	9 7/8	6 1/8	4 1/8	4 1/8	8 7/8	11 3/8	4 1/8	11	1 9/16	1 1/2	2 1/2	8 5/8	10 9/16	1 15/16	1 15/16	4 3/8	9 3/4	5								
10	13 15/16	1 11/16	3 3/8	5 3/8	9 3/4	8	13 1/16	9 1/16	6 7/16	5 5/16	12 13/16	13 1/16	6 1/16	13 1/4	1 15/16	1 7/8	3 3/16	11	13 1/4	2 7/16	2 7/16	5 7/16	12	6 1/4	12 1/4	2 1/2	4 5/8	10 7/8	5 1/4	7 1/2	10
12	16	1 15/16	4 5/16	7 1/8	12	10	15 1/8	11 1/8	6 7/8	5 5/8	15 5/8	15 3/8	7 5/8	16	2 5/16	2 1/4	3 13/16	13 1/4	15 7/8	2 7/8	2 15/16	6 11/16	14 7/8	8	14 3/8	3	5 5/16	13	6 1/2	9	12
14	18 5/8	2 5/16	4 3/4	8 3/4	14	12	16 3/4	13 1/4	7 3/4	6 3/4	16 1/4	19 1/4	8 3/4	18 5/8	2 3/4	2 3/4	4 5/16	16	18 1/2	3 3/8	3 3/8	8	18	9 1/2	16 5/8	3 3/8	6 1/2	15 1/2	7 1/4	11	14
16	20 5/8	2 7/16	5 5/16	8 3/4	15 3/4	12	16 3/4	13 1/4	7 3/4	6 3/4	16 1/4	19 1/4	8 3/4	.....	.....	.....	.....	.....	20 13/16	3 3/4	3 3/4	8	18	9 1/2	18 7/8	3 7/8	7 1/16	16 3/4	7 7/8	12	16
16	20 5/8	2 7/16	5 5/16	10	15 3/4	14	18 1/2	15 3/4	10	8	21 1/4	22 1/2	11 3/4	.....	.....	.....	.....	.....	20 13/16	3 3/4	3 3/4	9 3/4	21	10	.....	.....	.....	.....	.....	.....	.....
18	22 15/16	2 15/16	5 15/16	10	17 3/8	14	18 1/2	15 3/4	10	8	21 1/4	22 1/2	11 3/4	.....	.....	.....	.....	.....	22 7/8	4 3/16	4 1/8	9 3/8	21	10	20 1/4	4 1/4	8 1/16	19 1/4	8 3/4	14	18
20	25 7/8	3 3/16	6 9/16	12 1/2	19 1/2	15 3/4	24 15/16	17 7/16	11 3/16	8 15/16	24 5/16	24 3/16	11 15/16	.....	.....	.....	.....	.....	25 3/4	4 11/16	4 11/16	10 3/8	23 5/8	12 1/2	23 3/8	4 3/4	8 9/16	20 1/2	9 1/4	15	20
20	25 7/8	3 3/16	6 9/16	14	19 1/2	17 3/8	26 11/16	17 7/16	12 3/16	9 15/16	26 9/16	27 7/16	13 7/16	.....	.....	.....	.....	.....	25 3/4	4 11/16	4 11/16	11 1/4	26	14	.....	.....	.....	.....	.....	.....	.....
22	28 3/4	3 3/4	5 7/8	14	22	17 3/8	26 11/16	17 7/16	12 3/16	9 15/16	26 9/16	27 7/16	13 7/16	.....	.....	.....	.....	.....	29	5 1/4	5 5/16	11 1/4	26	14	25 7/16	5	9 1/4	24	9 3/4	17 3/8	22
24	32	4	6 3/4	15 1/2	23 1/2	19 1/2	29 11/16	20 11/16	12 7/16	10 15/16	25 15/16	29 11/16	15 5/16	.....	.....	.....	.....	.....	31	5 5/8	5 11/16	12 3/4	29 1/4	15	27 1/2	5 1/2	10 3/16	24 3/8	10	18	24
26	34 1/2	4 5/8	7 7/16	15 1/2	25	19 1/2	29 11/16	20 11/16	12 7/16	10 15/16	25 15/16	29 11/16	15 5/16	.....	.....	.....	.....	.....	33	6	6	12 3/4	29 1/4	15	30	6	12	28 5/8	13 1/2	20	26
26	34 1/2	4 5/8	7 7/16	17	25	22	32 9/16	21 13/16	12 9/16	12 1/16	32 13/16	32 9/16	16 13/16	.....	.....	.....	.....	.....	33	6	6	14 5/16	33	15 13/16	.....	.....	.....	.....	.....	.....	.....
28	37	5 1/8	8 7/16	17	26 7/8	22	32 9/16	21 13/16	12 9/16	12 1/16	32 13/16	32 9/16	16 13/16	.....	.....	.....	.....	.....	35 1/2	6 7/16	6 1/2	14 3/16	33	15 13/16	32	6 3/8	13 1/4	31 3/4	15	22	28
30	39	5 1/2	9 7/16	18 3/4	29 1/4	23 1/2	35 7/16	23 7/16	12 11/16	13 3/16	35 7/16	35 7/16	17 15/16	.....	.....	.....	.....	.....	38 1/2	7	7	15 3/8	35 1/4	18	34 1/2	6 7/8	14 1/2	34 3/4	16	24	30
32	41 1/2	6	10 7/8	20 1/4	31 7/8	25	39 11/16	24 15/16	13 3/16	14 3/16	34 7/16	36 15/16	18 7/16	.....	.....	.....	.....	.....	42 1/2	7 11/16	7 11/16	16 1/4	37 1/2	19 1/2	36 3/4	7 3/8	14 1/2	34 3/4	16	24	32
34	43	6 1/8	10 1/4	22	34	26 7/8	42	26	16	15	36	40	.....	.....	.....	.....	.....	.....	44 1/2	8 5/16	8 1/8	17 1/2	40 3/8	23	39	7 3/4	16 1/2	43	18	28	34
36	45 1/2	6 1/2	11 1/4	23 1/4	36	29 1/4	42 1/8	28 1/8	18 1/16	16 1/8	40 5/16	42 1/8	.....	.....	.....	.....	.....	.....	47 1/2	8 5/8	8 11/16	19 1/16	43 3/4	23	41 1/2	8 1/4	16 1/2	43	18	28	36
42	56	7	14	27	42	34	.....	.....	19 1/4	.....	44 7/16	.....	.....	.....	.....	.....	.....	.....	55 3/8	10	10 5/16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

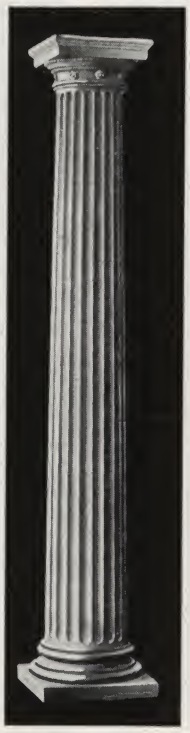
D and R dimensions represent opening through capital.



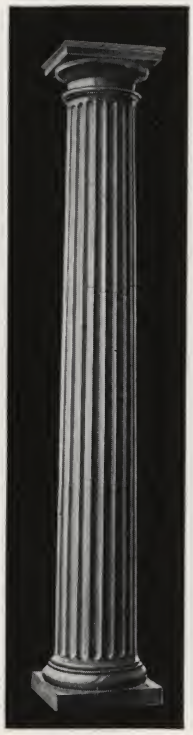
Design 213
Temple of the Winds



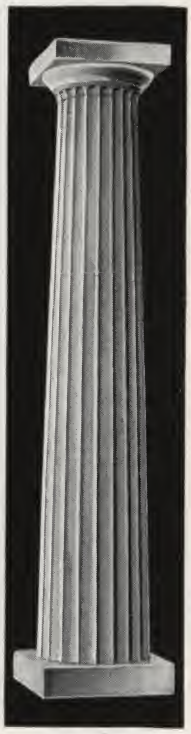
Design 219
Italian Composite



Design 224
Roman Doric (Diocletian)



Design 246
True Roman Doric



Design 700
Greek Doric

Design 240
Modern All-steel Doric

HARTMANN-SANDERS CO.

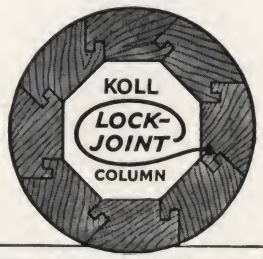
Exclusive Manufacturers of Koll's Patent Lock-joint Wood Staved and Turned Columns

MAIN OFFICE AND FACTORY
2155-2187 Elston Avenue, CHICAGO, ILL.
EASTERN OFFICE, 101 Park Avenue, Architects Building, NEW YORK, N. Y.

Products

KOLL'S PATENT LOCK-JOINT WOOD STAVE COLUMNS for exterior and interior; columns made in all woods; ROPED COLUMNS with pilasters and square columns; EXTERIOR and INTERIOR WOODWORK; COMPOSITION ORNAMENTAL CAPITALS.

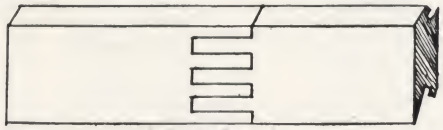
Also manufacturers of Pergolas, Lattice Work, and all architectural work for the garden.



THEY CANNOT COME APART

Spliced Butt Joint

In addition to the perfect lock joint of the staves, a joint has been devised to splice the



Spliced Butt Joint

butts of the staves should the length of column call for material longer than can be secured in one piece. In this process joints are put together with screw pressure and cold water waterproof glue, which helps to make these columns mechanically perfect.

Architect's Details

Columns conform accurately to any detail, are of the best materials and at as reasonable rates as are consistent with good work.

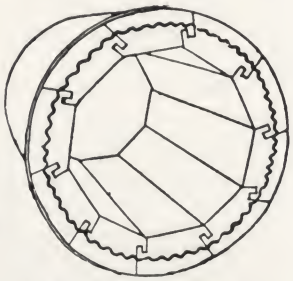
Our Patent Correct Entasis

Correct entasis secured in forming stave itself—The staves in all columns manufactured under Koll's patent are, in order to secure the proper entasis, straight one-third and swell-tapered upper two-thirds, so that when shaft is formed the correct entasis is obtained, securing sufficient stock at top and bottom of shaft to permit turning to detail without cutting too close to joint.

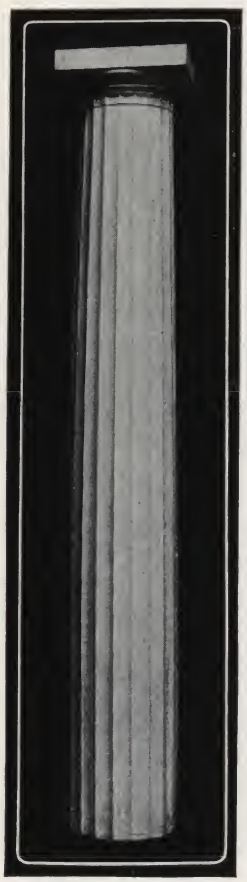
Columns furnished in any style of fluting or reeding.

Steel Reinforcement

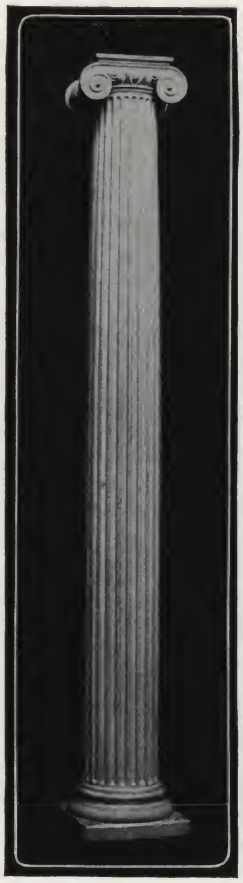
A corrugated steel band or ferrule reinforcement is applied to the bottom end of all Doric columns. The steel band, while adding considerable strength to the shaft, permits some flexibility so that no injury can be done by moisture that may be absorbed. This reinforcement is also added to both ends of all large columns.



Steel Reinforcement

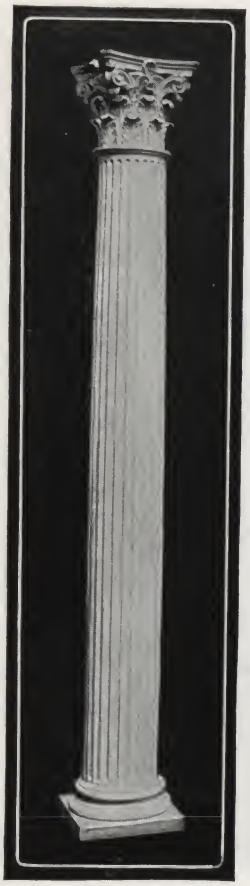


No. 195
Greek Doric Column Fluted

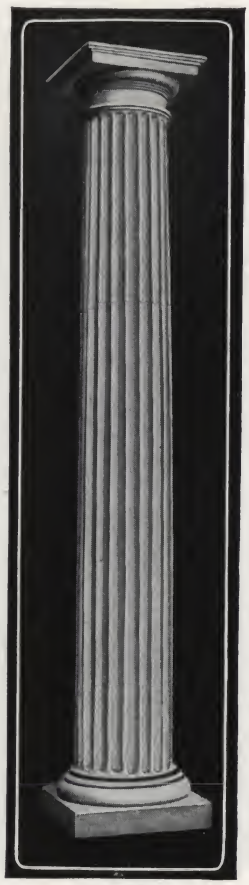


No. 235
Fluted Column Roman Ionic Cap Attic Base

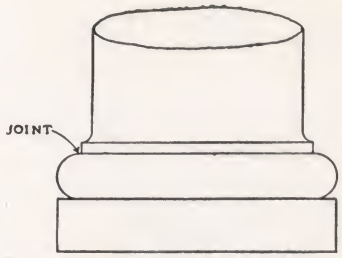
No. 220
Plain Column Doric Cap Attic Base



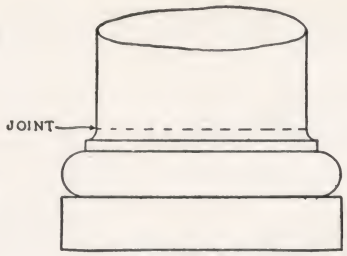
No. 255
Fluted Column Corinthian Cap Attic Base



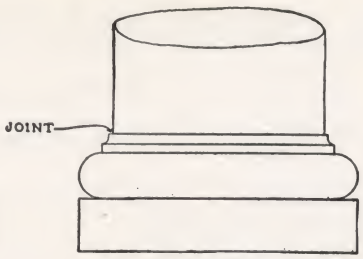
No. 215
Roman Doric Column Fluted



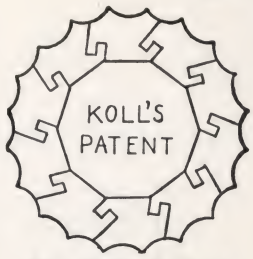
Style A Cove



Style B Cove



Style C Cove



Doric Fluting Columns
195, 195⅔, 215 and 215⅔

KOLL'S PATENT WOOD COLUMNS

	2-in. stock	2½-in. stock	3-in. stock	4-in. stock
With Cove on Shaft Like Style A				
Plain shaft .....in.	up to 18	19 to 22	23 to 30	31 and up
Doric and Ionic fluted .in.	up to 16	17 to 19	20 to 27	28 and up
Doric fluted, No. 195...in.	up to 22	21 to 28	29 to 39	40 and up
Cove Planted on Like B, or Made a Base Member Like C				
Plain shaft .....in.	up to 22	23 to 30	31 to 40	41 and up
Ionic fluted .....in.	up to 22	23 to 28	29 to 38	39 and up

Note: Before ordering columns, it would be well to examine detail closely and note whether cove is to be part of shaft, or whether this can be planted on. This company can make the column either way, but of course must be guided by what specifications and details call for.

Waterproof Glue

The staves of all columns and all exterior work produced by us are put together with cold water waterproof casein glue. Inside of all columns and pilasters above 14 ins. is waterproofed with a special waterproof compound.

Thickness of Stock

As the price of column is regulated by the amount and kind of lumber that enters into its construction, it is very important to state in the specifications the thickness of stock of which columns are to be made.

Our experience as specialists in column construction has demonstrated that thickness of stock for the various sizes, as called for in the table provides enough material to carry out properly the architectural detail and to afford required strength. Should an unusual load be placed on the columns, they can be reinforced by inserting a timber or iron column. When necessary to incase a structural timber or iron column already in place, columns can be made in halves and doweled or rail bolted as desired.

Flashings

Entire top of all wood and ornamental caps should be flashed with either galvanized iron, copper or sheet lead to protect the same from the weather. These flashings will be furnished when so specified.

Roped Columns

We have facilities for making roped columns and Colonial roped balusters, both for exterior and interior work. We can furnish them in stock designs or according to the architect's detail.

Cast Iron Metal Plinths

When columns rest on a cement or brick floor, the use of cast iron metal ventilated plinths is recommended. We furnish these in all sizes.

Cast Iron Metal Plinth

Specifications

Columns shall be the Koll's Patent Lock-joint Staved Wood Column, manufactured by the HARTMANN-SANDERS CO., Chicago and New York, made according to their design No. ....

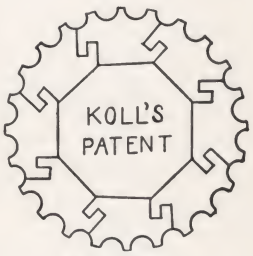
(Here specify the number in catalogue and if design is to be made according to the architect's drawing say: To be made according to details furnished.)

Staves shall be made of clear white pine stock (here specify the thickness wanted).

(See schedule for thickness of staves necessary for the various sizes of columns.)

Shafts, bases and gaps shall be glued with waterproof cold water glue; for staves longer than ordinary lumber length, staves shall be lengthened with a splice joint. Top of all column caps shall be flashed with galvanized iron (sheet lead or copper). The flashing to extend ½ in. over the edge of caps. The square plinths of column shall be cast iron ventilated plinths (or proper ventilation to be provided for the columns if stone concrete or wood plinths are used).

Columns shall be primed at the factory with a coat of white lead and oil on the outside, and all columns above 14 ins. shall receive a coat of waterproof asphaltum paint on the inside of shaft.



Ionic Fluting
Used on all other fluted columns shown in catalogue

Note: Should the columns arrive at building before they are ready to install, they must be stored in the building, or properly protected with waterproof coverings in a thorough manner, including both ends, and top of the column shafts. Do not lay columns directly on ground.

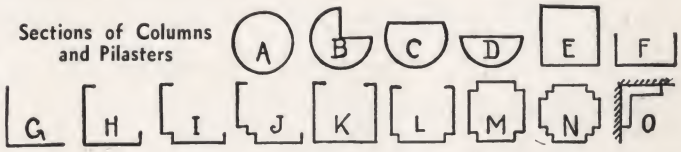
Instructions for Ordering

When ordering columns from our catalogue refer always to our catalogue numbers—give quantity wanted and size at largest and smallest diameter of shaft, and length over all. State if for *interior* or *exterior* use.

Note: All our details are carefully planned from dimensions given by approved authorities but we make no extra charge for following your detail, if similar to any of the designs shown in our catalogue.

When ordering pilasters to match columns, give dimensions at top as well as bottom of shaft, or state whether width is to be equal to the largest or smallest diameter of the column, or if they are to have the mean diameter of column shaft or if they are to have the same taper as the column. Give also depth of return. Refer to line drawing of sections of columns and pilasters when ordering.

Sections of Columns and Pilasters



We prime all exterior and interior columns (unless made of hardwoods) one coat of lead and oil, unless otherwise notified. We make no extra charge for priming.

When composition caps are to be used, we furnish without extra cost suitable wood dowels with columns to carry the weight of the overhead work.

Details

Unless specified to the contrary when ordering, all columns are made according to the proportions of the styles of architecture shown by the various cuts in the catalogue, but we can, if desired, make them according to the architect's detail.

Colonial Entrances and Millwork

Our extended efforts in the field of Colonial Architecture has enabled us to develop our organization to such a degree that we are in position to furnish in addition to our columns and pilasters, also Colonial entrances and millwork generally, either to the architect's detail or our own design.

Catalogues

We send the following catalogues on request:
Catalogue No. 48-8, Wood Columns and Pilasters.
Catalogue No. 53-8, Colonial Entrances.
Catalogue No. 39-8, Pergolas, Architectural Woodwork for the Garden and Garden Accessories.

A. F. SCHWERD MANUFACTURING CO.

Manufacturers of Wood Staved Columns

PITTSBURGH, PA.

SCHWERD'S QUALITY COLUMNS

The A. F. SCHWERD MANUFACTURING Co. has for many years been contributing to the architecture of this country wooden columns that are not only correct artistically, but scientifically as well. Many of these columns, installed in buildings a quarter of a century ago, are in as good condition as when they left our factory. Our painstaking attention to detail in the manufacture of these columns has made the name "Schwerd's Quality Columns" known throughout the building industry.

SERVICE TO ARCHITECTS

During our years of experience in co-operating with architects on the highest class of work for all types of buildings we have developed a complete line of standard columns and pilasters. These designs are in accordance with best practice and are illustrated and described in our latest catalogue. Copy will be sent on request.

Where the architect wishes to use his own design we can offer complete facilities for production and service and welcome an opportunity to co-operate in any way.

A FEW REPRESENTATIVE ARCHITECTS AND BUILDINGS USING "SCHWERD'S QUALITY COLUMNS"

Haddon Fortnightly Club
Haddonfield, N. J.
4 Detail 50″ x 28′
Ellery K. Taylor, Archt.

Harvard School of Business
Cambridge, Mass.
6 Detail 48″ x 40′
McKim, Mead & White, Archts.

Mercersburg Academy
Mercersburg, Pa.
8 Detail 44″ x 26′
Day & Klauder, Archts.

White Sulphur Springs Hotel
White Sulphur, W. Va.
10 Detail 40″ x 36′
Phillip Small, Inc., Archts.

Drew University Library
Madison, N. J.
15 Detail 36″ x 30′
Charles Z. Klauder, Archt.

All Saints Church
Buffalo, N. Y.
4 Detail 36″ x 29′
Bley & Lyman, Archts.

Lynchburg Hospital
Lynchburg, Va.
6 Detail 36″ x 27′
Stanhope S. Johnson, Archt.

Hollidays School
Hollidays, Pa.
4 Detail 36″ x 26′
Hunter & Caldwell, Archts.

University of Louisville Law Building
Louisville, Ky.
4 Detail 36″ x 24′
J. F. Larson, Archt.

Hamblin-Hovey Institute, Waltham, Mass.
KILHAM, HOPKINS & GREELY, Architects, Boston, Mass.

Harvard Law Library, Cambridge, Mass.
16 Detail 44″ x 22′
Coolidge, Shepley, Bullfinch & Abbott, Architects

High School
Plymouth, Mass.
4 Detail 36″ x 25′
Frank Irving Cooper, Archt.

Amherst College
Amherst, Mass.
8 Detail 36″ x 22′
McKim, Mead & White, Archts.

Peace Institute
Raleigh, N. C.
4 Detail 36″ x 20′
Atwood & Nash, Archts.

Ira Allen Chapel
University of Vermont
6 Detail 34″ x 32′
McKim, Mead & White, Archts.

Amherst College Theatre
Amherst, Mass.
4 Detail 35″ x 17′
McKim, Mead & White, Archts.

Memorial Municipal Building
Wareham, Mass.
6 Detail 34″ x 24′
William G. Upham, Archt.

University of Delaware
Newark, Del.
2 Detail 34″ x 23′
Charles Z. Klauder, Archt.

Masonic Temple
Floral Park, L. I., N. Y.
4 Detail 34″ x 21′
A. Person, Archt.

Slippery Rock Normal School
Slippery Rock, Pa.
4 Detail 24″ x 30′
W. G. Eckels Co., Archts.

THE MANUFACTURING OF "SCHWERD'S QUALITY COLUMNS"

Seasoning of the White Pine Lumber—*White PineLumber is used exclusively in "Schwerd's Quality Columns."* To serve properly its purpose as a support and to withstand successfully the action of the elements, a column must be made of thoroughly seasoned stock. We maintain at all times a year's supply of lumber at the source of supply, where it is seasoned by nature's slow but sure process—the open air.

Making the Staves—The stave machines were built specially to the order of the Schwerd Company. These machines shape and taper and tongue and groove the staves in one operation. By this method, when the staves are glued together, the shaft has the proper entasis, and the turning removes only the roughness of the lumber without weakening the shaft, and leaves shaft equal in thickness of material at any point in its length—an important detail in the life of a support.

Assembling and Gluing—After forming, the staves are spread with a special waterproof glue (by means of rotary brushes so that an even and properly distributed coat is maintained) and assembled. Heavy screw clamps, having a pulling power of 5000 lb., are then applied and drawn tight.

Caps and Bases—These members are made of mitered pieces and held together with corrugated steel fasteners and waterproof glue. This process seals the joints against moisture and prevents opening and consequent decay.

Column Troubles Eliminated—See that columns are in good condition before taken from the railroad station—or have notation made by your agent on your freight receipt of the damage. See that columns are kept stored in a dry place.

Do not allow columns to lie in damp cellars or newly plastered houses. Do not set up column until the porch roof is finished. Set base and bottom end of shaft in heavy layer of white lead.

REASONS FOR THE DURABILITY OF "SCHWERD'S QUALITY COLUMNS"

If a column were made of steel, it would be possible to so fashion the joints of the staves that they would rigidly interlock without any other attachment. In the past, attempts have been made to apply this same principle to wooden columns but it has not been successful, because the strength of wood is not sufficient to withstand the necessary tension on the interlocking members.

In every test, whether for demonstration purposes or in actual service, the strength of a wood column will be found to be that of the glue in the joints.

Realizing this, the gluing of the Schwerd Column is made a matter of utmost importance. The glue used is the strongest, most permanent glue obtainable. Schwerd millwork is done with such accuracy that the gluing surfaces meet absolutely flush at every joint. Tremendous pressure is applied to the freshly-glued column so that every particle of glue is either forced into the wood or from the joint.

The result of Schwerd gluing is a joint that is actually stronger than the solid wood, a column that will endure until the building of which it is a part is ready to be demolished.

Composition Caps can be furnished in any style desired.

LATH, PLASTER AND WALLBOARD

- SECTION - 9

Section Number 1 / 5 Catalog Number

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. . BUILDING ACCESSORY PRODUCTS AND STEEL PLASTERING COMMODITIES

BERGER MANUFACTURING DIVISION
Republic Steel Corporation
CANTON OHIO

BERLOY Blue LABEL Line

BUILDING PRODUCTS

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Eaves Trough and Pipe
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Fittings for Above
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Metal Lath and Accessories
Nails, Fence and Wire
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Every problem of plaster or stucco construction is met with Berloy Metal Lath.

Important advantages of metal lath construction are:

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BERLOY Blue LABEL Line

BERLOY EXPANDED METAL LATH

DIAMOND (EXPANDED METAL) LATH

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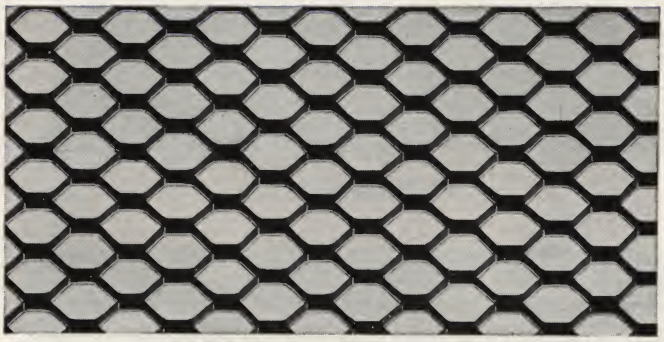
For firestops, cornices, false beam and column work and solid partitions. An ideal "general purpose" lath, easily cut, formed or bent to any shape to meet requirements of architectural design. Economical because small size of diamonds prevents forcing of excessive plaster through to back and also because the rigidity of the sheets permit low cost of erection.

Resquared on both ends to a length of 8 ft. 1 in., with sides absolutely straight. This eliminates the necessity for lapping.

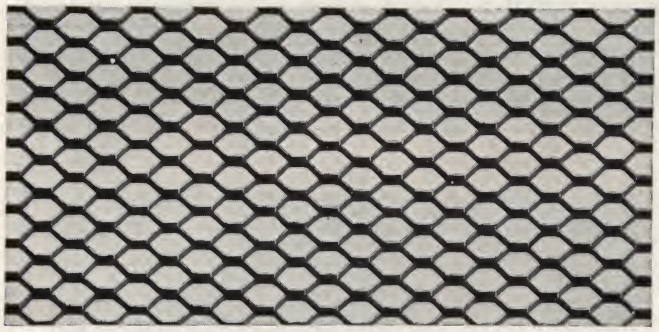


STANDARD MESH DIAMOND LATH

SMALL MESH

Similar in construction to Berloy Standard Mesh except that the diamonds are greatly reduced in size. An economical and highly efficient base for plaster in general construction. The smaller size of the diamonds increases the rigidity of the sheets and offers still greater resistance to the penetration of excess plaster.

Each sheet is perfectly smooth and flat and free from distortion.



SMALL MESH DIAMOND LATH

CORRUGATED (SELF FURRING) MESH

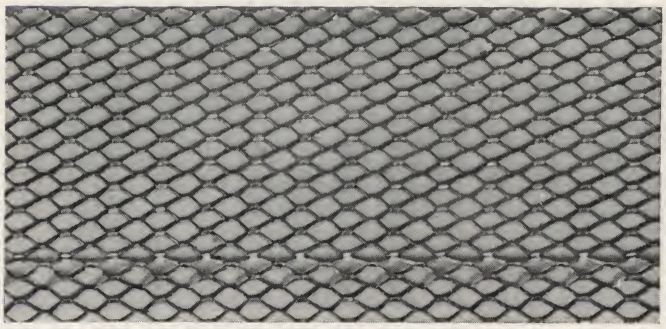
Particularly advantageous for exterior stucco construction when the lath is attached over sheathing, Berloy Corrugated Mesh eliminates the necessity of separate furring strips.

The ⅜ in. deep corrugations run the full length of each sheet, spaced 4 in. on centers. These corrugations provide the furring and, by providing exceptional rigidity, permit wider spacing of supports. In Corrugated Mesh construction the plaster or stucco keys in between the lath and the supporting stud or sheathing.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted	2.2, 2.5, 3.0, 3.4
Copper Bearing Steel	3.0, 3.4
Toncan Moly. Iron	3.4
Galvanized Steel	2.5, 3.4

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle. Also 27x96 in. Packed 10 sheets or 20 sq. yds. per bundle.



CORRUGATED OR SELF-FURRING DIAMOND LATH

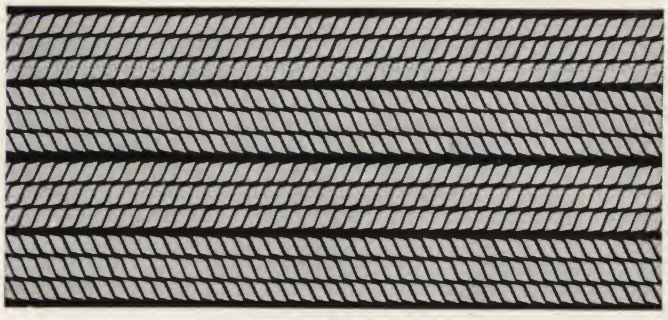
TRI-PLEX (FLAT RIB)

A widely used plaster base with characteristic features which produce considerable economy in the construction of a finished interior. Cross strands are so designed that alternate triple rows of keys are deflected in opposite directions, embedding the metal and producing a perfect mechanical bond with a minimum of plaster. The mesh of Tri-Plex lath is so fine that droppage of plaster is practically eliminated. Interlocking edges eliminate the necessity for side lapping, and the rigidity of the sheets allows wider spacing of studs without sacrificing strength in the walls.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted	2.75, 3.0, 3.4
Copper Bearing Steel	3.4
Toncan Moly. Iron	3.4
Galvanized Steel	3.4

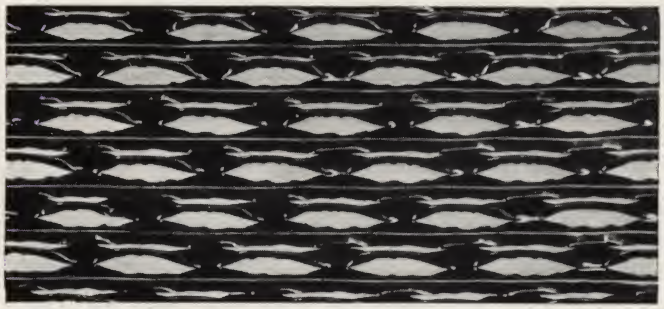
Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.



TRI-PLEX (FLAT RIB) LATH

BERLOY EXPANDED METAL LATH

3/8 IN. RIBPLEX LATH



BOSTWICK SHEET LATH

STUCCO MESH

FURRING NAIL INSTALLED

FURRING NAIL

3/8 IN. RIBPLEX LATH

For suspended ceilings, floor slabs in standard bar joist, floor and roof construction. Also used for attached ceilings under concrete joist construction. ⅜ in. ribs on 4 in. centers take the place of furring strips and nest together at sides and ends to make a rigid splice and a uniform plastering surface—a saving of labor and material. The flattened strands in ⅜ in. Ribplex decrease the size of the mesh openings and give a perfect key while requiring a minimum amount of plaster.

The sheets are convenient to handle and easy to erect, with no sharp cutting edges; ends are resquared after forming.

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted 3.0, 3.4, 4.0
Copper Bearing Steel 3.4
Toncan Moly. Iron 3.4
Galvanized Steel 3.4

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.

BOSTWICK SHEET LATH

An ideal base for tile backing, due to its extreme rigidity and resistance to the penetration of plaster. This type of lath actually requires less plaster than wood. Sharply defined ribs are spaced 1 in. on center, giving an unusual percentage of metal as compared to open area.

Economical for use in straight-away plastering, though due to its design, it does not lend itself to easy bending or forming for architectural plastering. **(Where bending or forming is necessary, Berloy Diamond Laths will prove more advantageous.)**

MATERIALS AND WEIGHTS (LBS. PER SQ. YD.)

Steel Painted 4.5
Galvanized Steel 5.2

Sheet Sizes: 24x96 in. Packed 9 sheets or 16 sq. yds. per bundle.

STUCCO MESH

A highly satisfactory stucco reinforcement—for use over sheathing—which produces a permanent, fireproof and crack-proof exterior. Expanded from 17 gauge steel, with 1¼ in. x 2½ in. diamonds. A special type of nail **(shown at left)**, used for attaching Stucco Mesh to the sheathing, acts as a furring device and securely locks the mesh ⅜ in. from the sheathing. This accurate furring method and the large size diamond mesh permit the stucco to penetrate the Stucco Mesh and thoroughly embed it.

MATERIAL AND WEIGHT

Supplied in painted steel in 1.8 and 3.6 lbs. per sq. yd. Sheet Sizes: 2 or 4 ft. wide by 8 ft. long. 1.8 lbs. packed 9 sheets (144 or 288 sq. ft.) per bundle. 3.6 lbs. packed 5 sheets (80 or 160 sq. ft.) per bundle. Nails packed 850 per box. 10 nails required per sq. ft. of Stucco Mesh.

SPACING OF SUPPORTS FOR LATH—INCHES

TYPE OF LATH	Vertical Surfaces Partitions, Walls, Furring, etc.								Horizontal Surfaces Ceilings, etc.							
	Weight, sq. yd. lbs.	A	B	C	D	E	F	G	Weight, sq. yd. lbs.	A	B	C	D	E	F	H
FLAT EXPANDED	2.2	§							3.0	x	†					
	2.5	x	†‡	†‡					3.4	x	x	†				
	3.0	x	x	†‡												
	3.4	x	x	†‡												
FLAT RIB	2.75	x	x	x					2.75	x	†	†				
	3.0	x	x	x	x				3.0	x	x	x	†			
	3.4	x	x	x	x	‡			3.4	x	x	x	x			
	4.0	x	x	x	x	‡			4.0	x	x	x	x			
⅜-in. RIB or EQUAL IN RIGIDITY	3.0	x	x	x	x	x			3.0	x	x	x	x	x		
	3.4	x	x	x	x	x	x		3.4	x	x	x	x	x	x	#
	4.0	x	x	x	x	x	x	‡	4.0	x	x	x	x	x	x	#
SHEET LATH π	4.5	x	x	x	x	x			4.5	x	x	x	x	†		

A—12-in.
B—Over 12-in. Incl. 13½-in.
C—Over 13½-in. Incl. 16-in.
D—Over 16-in. Incl. 19½-in.
E—Over 19½-in. Incl. 23½-in.
F—Over 23½-in. Incl. 31½-in.
G—Over 31½-in. Incl. 36-in.
H—Over 31½-in. Incl. 33½-in.

x Permissible for all purposes.

§ This weight of lath permissible only for solid partitions, and for cornerite.

† Permissible only for nailed on work (to wood joists or wood stud construction).

‡ This spacing for this lath permissible only for solid partitions.

π Recommended spacings for other weights and types of Sheet Lath may be obtained from Manufacturers.

Permissible only under concrete joists, etc.

Note: Vertical Surfaces—For Concrete Stucco, expanded metal reinforcing weighing either 1.8 or 3.6 lbs. per sq. yd. is used. Supports shall not be greater than 8-in. on centers in both directions.

Note: Horizontal Surfaces—Minimum weight of metal lath for ceiling construction shall be 2.75 lbs. per sq. yd., exclusive of paper or other backing.

BERLOY Blue Label Line

BERLOY EXPANDED METAL LATH

3/4 IN. RIBPLEX REINFORCEMENT

Unusual stiffness and weight make this a most effective reinforcement and centering for concrete floors and roofs, and for plaster partitions and ceilings on extremely wide spacing or supports. Also useful in special work such as tanks, curtain walls, culverts and railings.

For floor and roof construction ¾ in. Ribplex effects substantial savings in dead weight, materials and supporting structure, while offering a perfect combination of fire-resistance, permanence and economy. Ribs, ¾ in. high at 4.8 in. centers, support the stiff steel mesh.

MATERIALS AND WEIGHTS (LBS. PER 1000 SQ. FT.)

Steel Painted..... 50, 60, 75
Copper Bearing Steel..... 75
Toncan Moly. Iron..... 75
Galvanized Steel 50, 75

Sheet Sizes: 2 ft. wide, 8, 10 or 12 ft. long.
Packed 9 sheets (144, 180 or 212 sq. ft.) per bundle.

SAFE LOAD TABLES FOR ROOF AND FLOOR

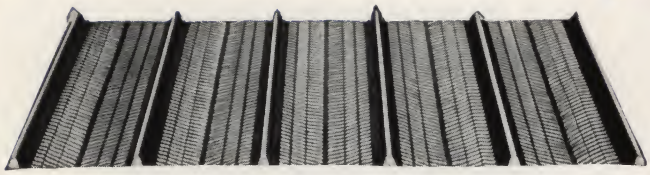
Slab Thickness	Weight per 100 sq. ft.	Max. unsupported span for wet concrete	3	4	5	6	7	8	9	10
2" 24-lb. per sq. ft.	50	3'-3"	291	164	104	73				
	60	3'-6"	346	194	124	85	63			
	75	4'-0"	405	228	146	101	74			
2½" 30 lb. per sq. ft.	50	3'-0"	376	211	135	94	69	53		
	60	3'-3"	449	253	162	112	82	62		
	75	3'-8"	588	331	211	147	108	81		
3" 36-lb. per sq. ft.	50	2'-9"	465	261	168	116	85	65		
	60	3'-0"	550	309	198	137	101	77	61	
	75	3'-4"	722	406	260	180	133	101	84	
3½" 42 lb. per sq. ft.	50	2'-6"	550	310	198	137	101	77	64	
	60	2'-9"	654	368	237	163	120	92	72	
	75	3'-0"	861	484	310	214	158	121	96	
4" 48-lb. per sq. ft.	50	2'-3"	640	360	230	160	117	90	71	
	60	2'-6"	756	425	272	188	139	106	84	68
	75	2'-9"	997	561	359	249	183	140	110	90

ACCESSORIES FOR ¾ IN. RIBPLEX

No. 1 Side Clips are used for supporting side lap between supports or purlins.

No. 2 Purlin Clip is used for attaching ¾ in. Ribplex to structural steel purlins.

No. 3 Ceiling Clip is used to attach ¾ in. Ribplex to underside of steel purlins for ceiling construction.



3/4 IN. RIBPLEX REINFORCEMENT

No. 1 SIDE CLIP

Showing Purlin Clip in Place with Prongs Hammered Down

No. 2 PURLIN CLIP

SIDE CLIP APPLIED

No. 3 CEILING CLIP

Laying Concrete on Ribplex Roof

CEILING LATH

Maximum Permissible Spacings of Cold Rolled Furring Channels

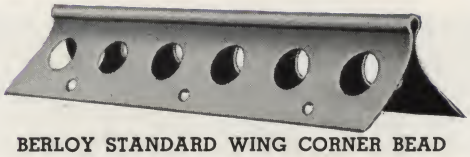
As Determined by Stiffness in Lath

TYPE OF LATH	Weight, sq. yd.	Spacing	Maximum Spans ¾-in. Channels	Maximum Spans 1-in. Channels
FLAT EXPANDED	3.0 lbs.	12	48	54
	3.4 lbs.	13½	48	54
FLAT RIB	2.75 lbs.	12	48	54
	3.0 lbs.	16	48	54
	3.4 lbs.	19	42	54
	4.0 lbs.	19	42	54
⅜-in. RIB or EQUAL IN RIGIDITY	3.0 lbs.	23½	36	48
	3.4 lbs.	31½	30	42
	4.0 lbs.	31½	30	42
SHEET LATH	4.5 lbs.	19	42	54

As Determined by Span and Stiffness of Channels

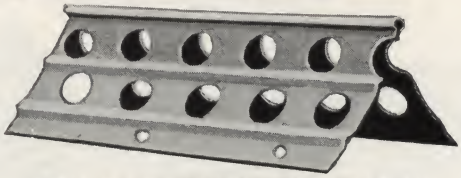
Span ¾-in. Channel	Span 1-in. Channel	Maximum Permissible Spacing Center to Center
30	42	31½
36	48	23½
42	54	19
48	54	16

BERLOY PLASTERING COMMODITY PRODUCTS



BERLOY STANDARD WING CORNER BEAD

Especially adaptable to all nail-on work.



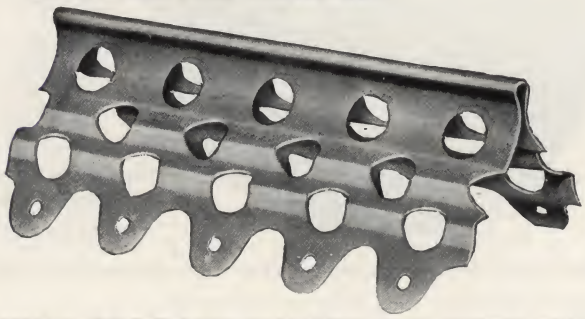
BERLOY WIDE FLANGE CORNER BEAD

Recommended for use where extreme rigidity coupled with exceptional width of flange is desired.

BULL NOSE CORNER BEAD
¾ IN. RADIUS STANDARD SHORT FLANGE

BERLOY C.B. CLIPS

BERLOY BULL NOSE CORNER BEAD

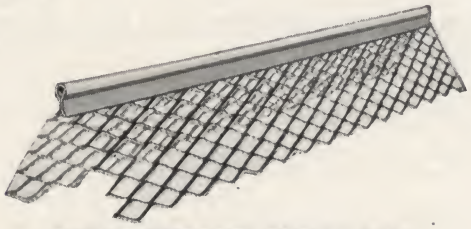


BERLOY WIDE FLANGE SCALLOPED EDGE CORNER BEAD

Where a wider nailing flange is required, this bead fills the demand with a flange width of 2½".

BERLOY STANDARD FLANGE SCALLOPED EDGE CORNER BEAD

Adaptable to all nail-on work. Manufactured with a flange width of 1¾".

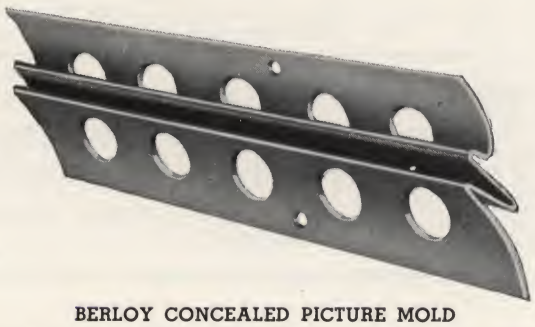


BERLOY EXPANDED CORNER BEAD

Small Nose—Permits keying of the plaster close to the head and leaves no flat surface to which the plaster may not adhere.

BERLOY EXPANDED ¾" RADIUS BULL NOSE CORNER BEAD

Bull Nose—Used where broad curved corners require extra protection.



BERLOY CONCEALED PICTURE MOLD

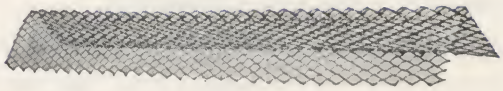
Berloy Concealed Picture Mold is an ideal mold, since it is applied before plastering and is almost invisible when the finish coat is applied.

WEIGHTS AND DIMENSIONS

Commodity	Size, In.	Gauge	Weight, Lbs. Per 1000 Ft.	Lengths, Ft.	Material
Berloy Standard Wing Corner Bead	1⅜"	26	.....	6, 7, 8, 9, 10, 12	Steel Galvanized
Berloy Wide Flange Corner Bead	2½"	26	.....	6, 7, 8, 9, 10, 12	Steel Galvanized
Standard Flange Bull Nose	¾" Radius	26	255	6, 7, 8, 9	Steel Galvanized
	¾" Radius	24	290	10, 12	Steel Galvanized
2½" Wide Flange Bull Nose	¾" Radius	26	420	6, 7, 8, 9, 10, 12	Steel Galvanized
Berloy Wide Flange Scalloped Edge Corner Bead	2½"	26	320	6, 7, 8, 9	Steel Galvanized
	2½"	24	416	10, 12	Steel Galvanized
Berloy Standard Flange Scalloped Edge Corner Bead	1¾"	26	220	6, 7, 8, 9	Steel Galvanized
	1¾"	24	245	10, 12	Steel Galvanized
Berloy Concealed Picture Mold	.....	26	220	10	Steel Galvanized
Berloy Corner Bead Clips	.....	26	25	.....	Blue Steel
Berloy Expanded Corner Bead Small Nose	2½"	26	210	6, 7, 8, 9	Steel Galvanized
	2½"	24	240	10, 12	Steel Galvanized

BERLOY Blue LABEL Line

BERLOY PLASTERING COMMODITY PRODUCTS

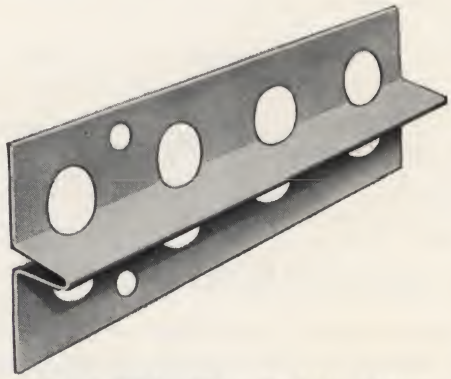


CORNERITE

A practical and economical reinforcement for all inside plaster corners. Formed from a sheet of diamond mesh lath, it fits into the room corners and reinforces the plaster in all directions.

STRIP-ITE

For forming plaster reveals around window and door openings; for reinforcing odd shaped corners; for all types of plastering patch work; for any openings that are narrower than a full width sheet of lath; for reinforcing plaster and wall board joints and corners.



BERLOY STRAIGHT POINT BASE SCREED

For use as a finished edge for concrete or other troweled bases when they come flush with the plaster.

MODIFIED SQUARE SHORT FLANGE CASING
(Also made with Long Flange)

SHORT FLANGE CASING

EXPANDED FLANGE CASING

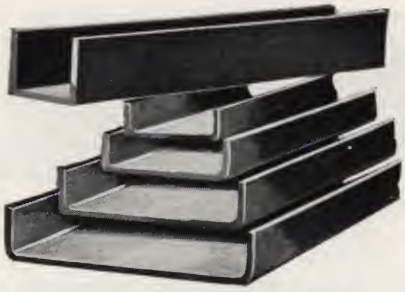
BERLOY STEEL CASINGS

These flush type casings are sanitary, easy to clean and in keeping with the general simplicity of modern interiors. They prevent cracking of the plaster, and air leakage around door and window openings. They are made with both solid and expanded type of flange.

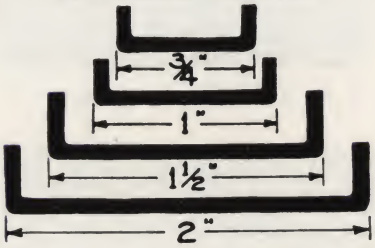
WEIGHTS AND DIMENSIONS

Commodity	Size, In.	Gauge	Weight, Lbs. Per 1000 Ft.	Lengths, Ft.	Material
Berloy Cornerite	2x2		80	8	Painted Steel or Galv. Steel
	3x3		120	8	Painted Steel or Galv. Steel
	4x4		160	8	Painted Steel or Galv. Steel
Berloy Strip-ite	3"		60	8	Painted Steel or Galv. Steel
	4"		80	8	Painted Steel or Galv. Steel
	6"		120	8	Painted Steel or Galv. Steel
Berloy Straight Point Base Screed	1½"	26	185	10	Steel Galvanized
	¾"	26	215	10	Steel Galvanized
	½"	24	230	10	Steel Galvanized
	¾"	24	270	10	Steel Galvanized
Solid Flange Casings				6, 7, 7'4", 8, 9, 10, 12	
Modified Square	Any style can be had in ½, ⅝, or ¾ in. ground thickness.	24	210		Steel Galvanized
		20	250		Steel Galvanized
Wide Modified Square		24	310		Steel Galvanized
		20	350		Steel Galvanized
Wide Flange Square		24	250		Steel Galvanized
		20	290		Steel Galvanized
Short Flange Square		24	220		Steel Galvanized
		20	320		Steel Galvanized
Short Flange Bull Nose		24	220		Steel Galvanized
		20	320		Steel Galvanized
Wide Bull Nose		24	340		Steel Galvanized
		20	450		Steel Galvanized
Expanded Flange Casings				7, 7'6", 8, 9, 10, 12	
2¾" Bull Nose		24	350		Steel Galvanized
2⅝" O. G.		24	350		Steel Galvanized
2¾" O. G.		24	350		Steel Galvanized
Special		24	435		Steel Galvanized

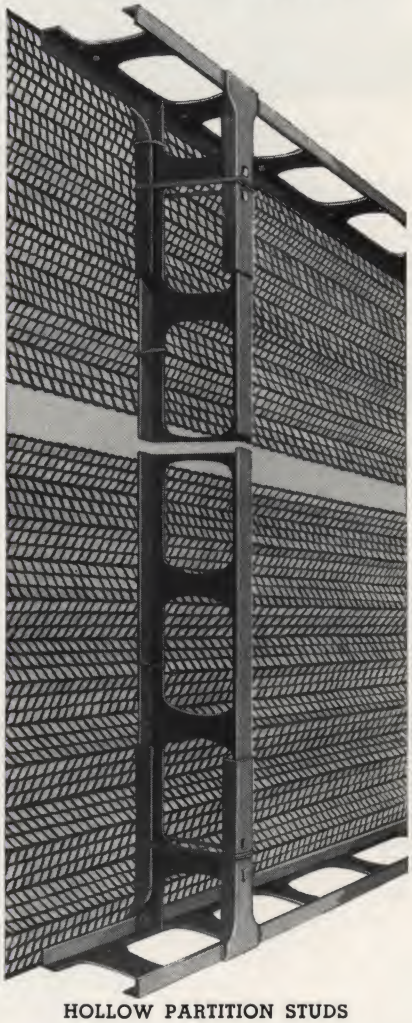
BERLOY PLASTERING COMMODITY PRODUCTS



COLD ROLLED CHANNELS



CROSS SECTIONAL VIEW OF BERLOY COLD ROLLED CHANNELS



HOLLOW PARTITION STUDS

BERLOY COLD ROLLED CHANNELS

For suspended ceilings, partitions, etc., Berloy Cold Rolled Channels are straight and true, with square corners that prevent rolling. Flanges are ⅜ in. high, standard lengths 16 and 20 feet. ¾ in. and 1 in. channels are shipped 20 pieces to bundle; 1½ in. and 2 in., 10 pieces to bundle.

Weights per 1,000 linear feet are as follows: ¾ in. channel, 276 lbs.; 1 in. channel, 332 lbs.; 1½ in. channel, 422 lbs.; 2 in. channel, 553 lbs.

BERLOY HOT ROLLED CHANNELS, ANGLES AND BANDS

Hot Rolled Channels, Angles, and Bands are available in the following sizes and weights per 1,000 linear feet.

Channels: ¾"— 300 lbs.
1"— 410 lbs.
1½"— 850 lbs.
2"—1250 lbs.

Angles: 1½"x1½"x⅛"—1150 lbs.
1½"x1½"x$\frac{3}{16}$"—1650 lbs.

Flats: 1"x⅛"—380 lbs.
1"x$\frac{3}{16}$"—580 lbs.

BERLOY HOLLOW PARTITION STUDS

Berloy Hollow Partition Studs installed on any job assure permanence, rigidity and economy. Because of their unique design, they provide rigid construction. When metal lath is attached to both sides of these studs an ideal base for plaster is obtained. There is no necessity for cutting expensive chases for electrical conduits or pipes as the design of these studs provides maximum room for their passage without sacrificing the strength of the studs.

Berloy Hollow Partition Studs are fire-safe, provide excellent heat insulation, sound resistance and are rodent and termite proof. They will not swell or warp and will resist impact, vibration or plaster cracking much more effectively than partitions built of masonry or gypsum block.

SIZES AND WEIGHTS

2"	Studs and Track	410 lbs. per M Lin. Ft.
3"	Studs and Track	580 lbs. per M Lin. Ft.
3¼"	Studs and Track	635 lbs. per M Lin. Ft.
4"	Studs and Track	654 lbs. per M Lin. Ft.
6"	Studs and Track	1032 lbs. per M Lin. Ft.

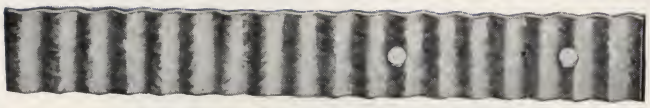
Shoes for 2", 3", 3¼" and 4" Studs 69 lbs. per M Pcs.
Shoes for 6" Studs 80 lbs. per M Pcs.

BERLOY Blue LABEL Line

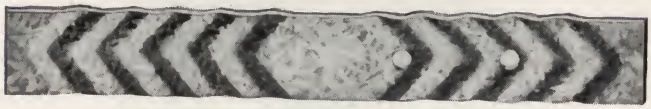
BERLOY PLASTERING COMMODITY PRODUCTS

CORRUGATED AND HERRINGBONE WALL TIES

A series of herringbone corrugations give the ends a firm hold, while the center cannot stretch in use. Herringbone Ties are made from galvanized steel in 26 gauge, 7 in. long x ⅞ in. wide, crimped both ends, with nail hole in one end for brick veneer work. Shipped in boxes of 1,000 pieces. Weight, approximately 35 lbs. per box.



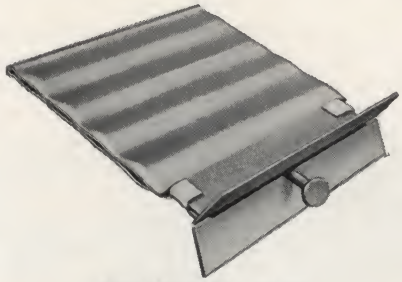
BERLOY CORRUGATED WALL TIES



BERLOY HERRINGBONE WALL TIES

WALL PLUGS

Inserted at masonry joints, Berloy Wall Plugs afford an efficient means of nailing interior trim. Made of heavy galvanized stock. They are 2⅞ in. deep and 2¼ in. wide. Depth of entrance flange is 1/16 in. Packed 250 to the carton. Shipping weight, 25 lbs. per carton.



BERLOY WALL PLUG

BERLOY TIE AND HANGER WIRE

Made in a complete range of sizes. For tying, 16 or 18 gauge galvanized or black wire is generally used. For hangers either No. 8 or No. 7 galvanized or black wire. Berloy tie wire comes in 20 in. rolls or in 25 lb. hanks cut to length. Sold by the pound in quantities to meet requirements.

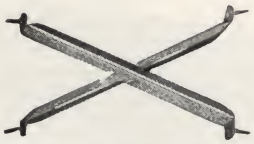
TIE WIRE IN HANKS

TIE WIRE IN ROLLS

DUPLEX STEEL BRIDGING

Builders and carpenters who desire to speed the work of installing bridging, getting a neat job that costs considerably less than wood bridging and at the same time is stronger and better looking, will appreciate the features of Duplex Steel Bridging. Made in one piece, it is easier to handle, and as only four nails are required, the carpenter can work faster with less danger of splitting the joists. A simple twist and TWO braces are ready for placing.

Packed 25 pcs. per Bundle.



DUPLEX BRIDGING

METAL ARCHES

The arches are fabricated of Galvanized Steel and are perfectly formed. The corner bead is integral with the arch. They are inexpensive in first cost and are easily erected. Made in Half Circle, Gothic and Elliptic design. They are made for use with 2x4 in. studs. The studs should be spaced 1½ in. wider than the finished opening.

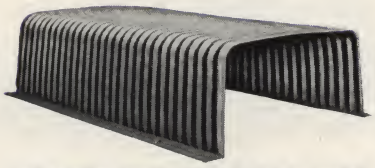
STYLES OF METAL ARCHES

Style of Arch	Spacing at Studs or Bucks in.	Width of Finished Opening in.	Height from Spring Line to Crown, in.
No. 11	21½	20	10
No. 22	33	31½	15¾
No. 33	33	31½	11⅜
No. 44	51	49½	12½
No. 55	63	61½	13
No. 66	72	70½	13

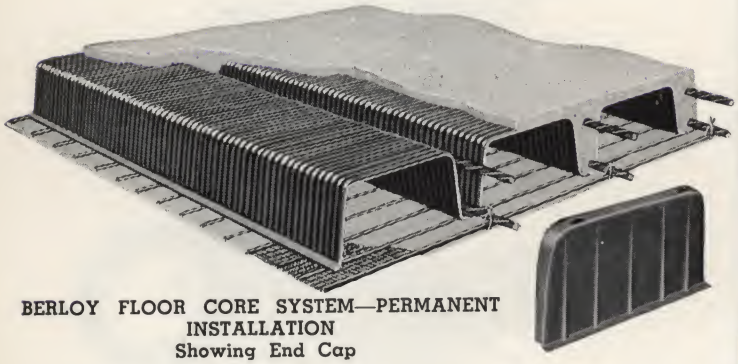
Above arches are for Standard 2x4 in. studding. They can also be supplied for 2x6 in., 2x8 in., or 2x10 in. studding.
Packed in one-set cartons only.

METAL ARCH

BERLOY BUILDING ACCESSORY PRODUCTS



STRAIGHT SIDE PERMANENT CORE



BERLOY FLOOR CORE SYSTEM—PERMANENT INSTALLATION
Showing End Cap

BERLOY FLOOR CORE SYSTEM—PERMANENT INSTALLATION

Berloy Permanent Core System is an ideal type of reinforced concrete floor construction. Sheet metal cores are 26 gauge, stiffened with deep corrugations, and remain permanently on the floor. In construction ⅜ in. Ribplex Lath (for the ceiling) is placed on open centering. Cores are then laid on top of the Ribplex and nailed to the plank centering. Reinforcing steel erected in place and concrete placed over the cores complete the floor. After concrete has set, centering is withdrawn and lath ceiling is ready for plastering.

END CAPS

Each row of cores or forms will require 2 or more end caps. Where an opening occurs, 2 end caps will be required as well as the 2 on the ends of the row. There is a proper end cap for all standard sizes and shapes.

Permanent end caps are 28 gauge.

STANDARD SIZES AND SHAPES

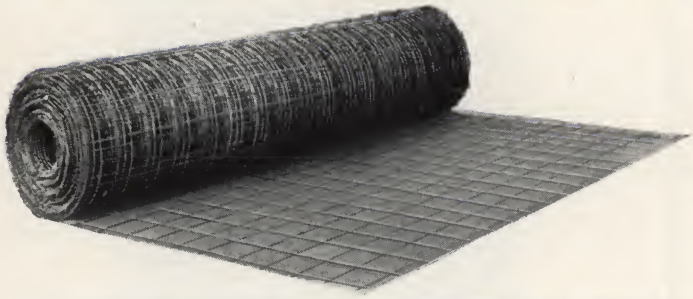
Standard widths, 20 in. Standard depths, 6 in., 8 in., 10 in., 12 in., 14 in. Length, 3 ft. 0 in and 1 ft. 6 in. Gauge 26. Material—Open hearth steel.

Special widths, 12 in. and 16 in.

Also Single Tapered from 20 in. to 16 in. in width and Double Tapered 20 in. to 16 in. in width and depth decreased by two inches at one end.

Tapered Cores furnished in 3 ft. 0 in. length only.

Tapered Cores not furnished in special or narrow widths.



BERLOY WELDED STEEL FABRIC

An ideal reinforcement for concrete pavements, roadways, floors, driveways, sidewalks, sewer pipe, viaducts, retaining walls or wherever concrete is used. Write for key table of dimensions, areas and weights.

BERLOY EXPANDED METAL

BERLOY EXPANDED METAL

Berloy Expanded Metal is recommended for reinforcing material, partitions, gratings, machine guard purposes, lockers and similar work.

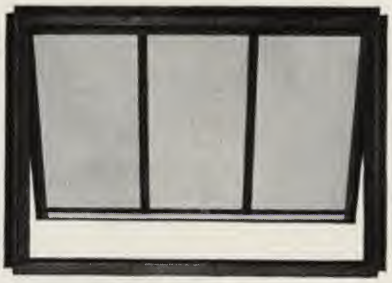
Where the nature of the work requires an open mesh material that is strong, light in weight, easy to handle and rigid but workable, Berloy Expanded Metal is economical and thoroughly practical.

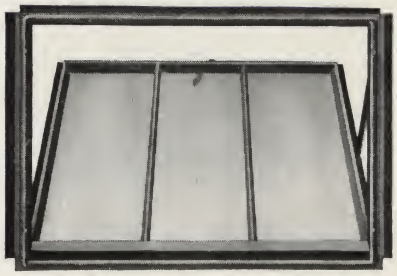
BERLOY Blue LABEL Line

BERLOY BUILDING ACCESSORY PRODUCTS

BERLOY STEEL BASEMENT WINDOW

TOP HINGED





BOTTOM HINGED

Berloy Steel Basement Windows give maximum daylighting; cannot warp or stick; they open easily, are weathertight and are simple to screen.

There are five standard stock sizes.

Steel mullions for joining two or more basement windows side by side in the same opening are also carried in stock.

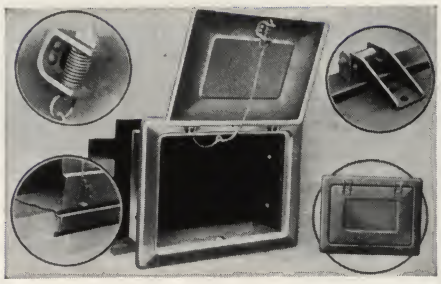
Glass Size	Lights	Window Opening Size
10"x12"	3	2' 9½"x1' 3"
10"x20"	3	2' 9½"x1' 11"
12"x18"	3	3' 3½"x1' 9"
14"x20"	2	2' 7¼"x1' 11"
*10"x12"	2	1' 11¼"x1' 3"

*Only in Top Hinged.

SCREENS FOR BASEMENT WINDOWS

Screens for basement windows are carried in stock at the plant for immediate shipment. Screens have steel frames and 16 mesh bronze cloth.

BERLOY COAL CHUTES



A convenient and economical improvement on the "cellar window." Breakproof, weather-proof and thief-proof. Simple construction made without castings; door and frame being of heavy rust-resisting copper bearing pressed steel.

Sold complete with positive spring latch, slotted hinges, which hold the door open, and formed lugs, which act as anchors for cementing in masonry openings.

STANDARD SIZES

Frame: 27 in. wide by 21¼ in. high.

Door: 22 in. wide by 16 in. wide.

Depth: 8 in. or 12 in.

BERLOY FORMED STEEL LINTELS

Berloy Formed Steel Lintels can be used for all openings up to 6 ft. 3 in. which do not require structural lintels. They are used with wood windows as well as with steel windows.

The continuous horizontal ribs and the turned edges provide much greater strength than plain formed angles of the same size and provide a proper bed for the brick and mortar. The 3½ in. horizontal leg does not extend beyond the face of the brick. Lintels receive a shop coat of paint before shipment.

Lengths—2 ft. 0 in. to 4 ft. 6 in. 3½ in. x 3½ in. x 11 Ga.

Lengths—5 ft. 0 in. to 7 ft. 0 in. 3½ in. x 4½ in. x 9 Ga.

OTHER BERLOY STEEL BUILDING PRODUCTS

Galvanized and Black Sheets
Toncan Iron
Stainless Steel

Roofing, Siding and Accessories
Battens, Corners

Box and Roll Terne
Long Ternes, Valleys
Coke Tin Plate

Eaves Trough
Conductor Pipe
Mitres, Elbows, Ends
Cutoffs, Strainers, etc.

O. G. Gutters, Formed and Roll Valley
Ridge Roll

Hangers and Accessories

Steel Ceilings
Metal Shingles
Parabolume Lighting Unit

Nails, Staples
Barb and Smooth Wire
Woven Fence and Netting
Posts, Gates, etc.

BERLOY

Blue LABEL Line

WAREHOUSES AND BRANCH OFFICES

Boston, Mass.
307 Dorchester Ave.
Phone: S. Boston 1600

Philadelphia, Pa.
16th St. & Washington Ave.
Phones: Bell-Fulton 2525
Keystone-Race 5662

St. Louis, Mo.
1425-31 No. 2nd St.
Phone: Garfield 0090

WAREHOUSES

Chicago, Ill.
West 16th St. & Kostner Ave.
Phone: Crawford 5448-9

St. Paul, Minn.
Bradford & Endicott St.
Phone: Midway 2794

Springfield, Ill.
216 E. Washington St.
Phone: Main 2428

Springfield, Mo.
513 West Olive St.
Phone: 232

DISTRICT SALES OFFICES

New York, N. Y...521 Liggett Bldg., 41 E. 42nd St.—Phone: Murray Hill 28232
Chicago, Ill.....704 Builders Bldg., 228 N. LaSalle St.—Phone: State 1434
Minneapolis, Minn....604 McKee Bldg., 18 N. 4th St.—Phone: Atlantic 7780
Dallas, Tex.....612 Construction Bldg.—Phone: 7-3423

BERGER MANUFACTURING DIVISION

Republic Steel Corporation

CANTON - - OHIO

SECTION 9

CONTINUED ⟶

THE BOSTWICK STEEL LATH CO.

Manufacturers of Metal Lath, Accessories and Steel Stud Partitions

NILES, OHIO

EASTERN WAREHOUSES: PHILADELPHIA, PA., AND DELAWANNA, N. J.

Nearly half a century of continuous manufacture of metal lath and accessories stands behind THE BOSTWICK STEEL LATH CO.'s reputation as one of the foremost manufacturers in the world. Bostwick Metal Lath was first made in 1890. Thoroughly tested by time, it enjoys a most successful record for durability and satisfactory service in outstanding buildings of every type.

All Bostwick Lath is made and sold in accordance with Simplified Practice Recommendation R3-36 of the U. S. Department of Commerce, and Federal Specification No. QQ-B-101-B.

Bostwick Offers a Complete Line

Bostwick offers the architect a metal lath to meet every lathing requirement and a complete line of accessories for every type of installation. Among these are included: (a) backing and reinforcement plaster for interior walls and ceilings, (b) for exterior stucco, (c) reinforcement and centering of light concrete floors and roof slabs, (d) cement reinforcement for tile, marble and other special interior treatments, (e) support and reinforcement of 2-in. partitions, as well as steel studs for hollow partitions, (f) for drop ceiling construction, (g) fire resisting treatment at danger points in wood construction, (h) crack resistance in the angles of wood-lathed walls and ceilings, (i) fire resisting reinforcement for concrete around steel members in steel construction.

An outstanding firm, offering a complete line of products that have been thoroughly tested through the years.

Co-operation with Architects

Bostwick's staff of experts stands ready to assist you at all times. Inquiries addressed directly to our main office will receive prompt attention. We provide standard specifications for all types of Bostwick Metal Lath or Partition construction and shall be glad to supply information about actual installations of every description.

Facilities for National Distribution

Responsible dealers in Bostwick products are conveniently located in trading centers throughout the country. They carry adequate stocks for the usual needs of contractors and builders. Twenty-four-hour service is maintained in factory shipments. Bostwick dealers are responsive to inquiries for information and prompt in rendering service.

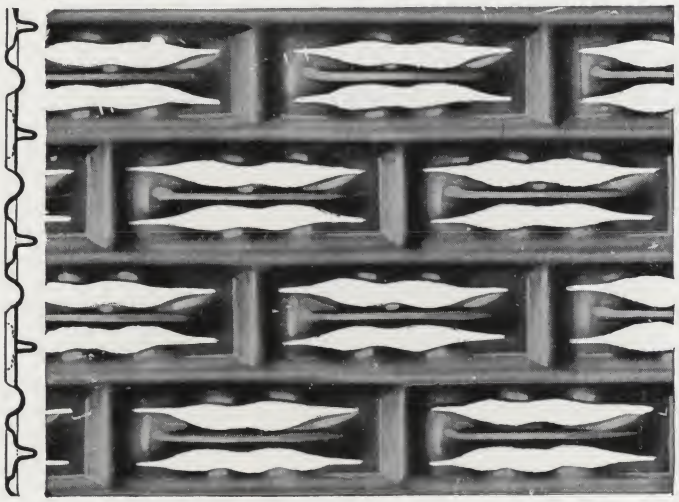
THE IMPROVED SUPER-BOSTWICK "TRUSS-LOOP" LATH

Size and Weight—Super-Bostwick "Truss-Loop" Lath comes in standard 24x96-in. steel sheets. Weight: 4.5 lbs. per sq. yd. painted; 5.25 lbs. per sq. yd. galvanized. Nine sheets to the bundle, equivalent to 16 sq. yds. This is the original Bostwick Lath, improved to a point where it is in a class by itself as an all-purpose metal lath. Longitudinal ribs and transverse corrugations give it extraordinary stiffness both in length and width. It has maximum reinforcement qualities and gives the lowest finished plaster cost of any permanent fireproof plaster base.

Super-Bostwick "Truss-Loop" has long since established itself as an ideal lath, whether used with wood construction or applied over metal channels. Ease of installation is an important factor. "Truss-Loop" can be nailed or wired in minimum time. Stretching is unnecessary. The lath is exceptionally rigid under the plasterer's trowel, even when supports are as wide spaced as 24 in. on centers. Plastering time is reduced, as scratch and brown coats can be applied without moving the scaffold.

The distinctive formation of Super-Bostwick "Truss-Loop" Lath gives the plaster a triple key, further adding to the rigidity of the finished wall.

Bostwick has complete specifications available for all installations of Super-Bostwick "Truss-Loop" Lath. Architects are invited to write for them.



Six Practical Advantages—(1) Saves labor, because it is so rigid and stiff that the plaster sticks on first application; each sheet can be easily handled by one man; no deflection in the lath surface which would necessitate retroweling.

(2) Saves yardage of lath by a nesting rib which automatically laps the edge of each sheet, thus eliminating waste of lath by overlapping.

(3) Saves Furring Strips, by placing loops inward, which gives space for the plaster key.

(4) Saves Lumber, because its strength permits working wider centers—from 12 to 16 in. to 24 in., thus requiring fewer studs; lath will not sag with the weight of mortar and is exceptionally rigid under the trowel.

(5) Saves Plaster, because the triple-bond plaster key grips all the mortar, allowing no waste.

(6) Saves Time, because it has a flat non-giving surface, thus making for faster troweling, and the scratch and brown coats can be applied from the same scaffold.

For Light Slab Construction—A rigid series of tests by the Building Department of New York City resulted in approval for this lath in slab construction within the boundaries of Greater New York and it has been widely used in other localities, with uniformly good results.

A test of Bostwick "Truss-Loop" Lath as floor lath supported on 2-ft. centers in a 2-in. concrete slab was made at Carnegie Institute. A load of 1200 lbs. per sq. ft. was applied—a test far beyond the reasonable requirements for the slab. Examination showed no cracks, slipping or deflection.

BOSTWICK CHANNELFORM LATH (FOR FLOOR REINFORCEMENT)

Bostwick Channelform Lath is furnished in standard weights of 4.5 lb., 6.0 lb., and 6.75 lb. per sq. yd.

Bostwick Channelform Lath is an improvement on Super-Bostwick "Truss-Loop" for floor reinforcement purposes. It is identical, except that the sheet is offset laterally, so that every other longitudinal section is raised to give it a channel-like section which further stiffens the sheet.

Bostwick Channelform, the stiffest lath for floor slab construction, supports the green concrete during the setting period with minimum deflection. Channelform's evenly distributed resistance withstands the strains incident to construction without buckling or abnormal deflection. Workmen will occasionally step on the floor between joists. In the case of less rigid laths, these strains cause buckling or marked deflection, but with Channelform their effect is scarcely noticeable.

In common with Super-Bostwick "Truss-Loop," Channelform retains all but a small percentage of grout in the concrete. Grout losses seriously weaken the floor slab, as the seepage carries with it a high percentage of the cement. The uniformly high supporting strength shown in test slabs over Super-Bostwick "Truss-Loop" or Channelform is due, in large measure, to the fact that the concrete has not been impaired by these losses,

BOSTWICK JUNIOR EXPANDED METAL LATH (5/16-IN. DIAMOND PATTERN)

The 5/16-in. mesh size of Bostwick Junior Expanded Lath is the scientifically correct size for a diamond pattern lath. The meshes are large enough to grip the plaster firmly and form an even, rigid wall, yet small enough to provide all the special advantages of a small-mesh lath.

Bostwick Junior is unexcelled as a diamond type, small-mesh lath.

Sizes and Weights—Bostwick Junior Lath is furnished in standard 24x96-in. sheets, nine sheets to the bundle, equivalent to 16 sq. yds. Weights: 2.2 lb., 2.5 lb., 3.0 lb., 3.4 lb. in painted steel; 2.5 lb., 3.4 lb. in galvanized; 3.0 lb., 3.4 lb. in copper alloy; and 3.4 lb. in Toncan metal or Armco Ingot iron.

A General Purpose Lath—Bostwick Junior Expanded Metal Lath is a general purpose lath, ideal for a large proportion of plastering jobs. It is particularly suited for use in partitions, suspended ceilings, coverwork and 2-in. non-bearing plaster partitions.

A small-mesh lath of the diamond type, it possesses great advantages over the older types of diamond-mesh laths. Its 3000 more meshes to the sheet plus the 5/16-in. mesh size give it good plaster keying qualities.

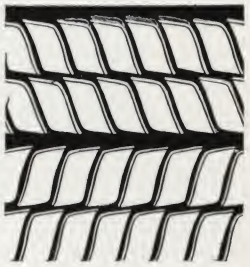
Ideally Suited for 2-In. Partitions—Bostwick Junior Expanded Lath has qualities which make it an outstanding lath for economical 2-in. plaster partition work. Such partitions are staunch and have a high rating for round resistance.

BOSTWICK BOSS-RIB METAL LATH (FLAT RIB EXPANDED TYPE)

Bostwick Boss-Rib Metal Lath is a superior, small-mesh, flat rib type of expanded lath. Made of specially designed Bostwick equipment, it is noted for its accurate fabrication and correct distribution of metal to give maximum strength and stiffness.

Sizes and Weights—Bostwick Boss-Rib comes in standard 24x96-in. sheets, nine sheets to the bundle, equivalent to 16 sq. yds. Weight: 2.75 lb., 3.0 lb., 3.4 lb. and 4.0 lb. painted steel; 3.4 lb. in copper bearing or galvanized; and 3.4 lb. in Toncan metal or Armco Ingot Iron.

More Than a Flat Rib Lath—Boss-Rib is classified as a flat rib lath but its longitudinal ribs give more than ordinary stiffness owing to their oblique position. It has true plaster-saving qualities, as the ribs so placed tend to spread the mortar instead of cutting it. In spite of the space taken by the ribs, it has between 4 and 5 per cent more openings than junior mesh, and the meshes are correspondingly smaller.



Self-furring—The flat rib's oblique angle to the plane of the sheet makes Boss-Rib a self-furring lath, suitable for application over any flat surface, such as ceilings to be replastered. This feature also enables it to give a better bond over studs, beams, channels or other supports.

An Ideal General Purpose Lath—Boss-Rib is an ideal general purpose lath—economical, rigid and a substantial plaster saver. Its ease of handling makes it a favorite with workmen. In a wide choice of weights and materials, it is adaptable to almost every lathing requirement.

BOSTWICK RIB EXPANDED METAL LATH (3/8 IN. AND 3/4 IN. RIB)

The demand for an expanded lath with augmented rigidity is supplied in Bostwick Rib Expanded Laths. Leaders among products of their types, they may be relied upon for correctly rectangular sheets of uniform fabrication, effectively stiffened by true, straight ribs.

Bostwick 3/8-in. Rib Expanded Lath is preferred as a plaster base on wide spacings and as a stiff reinforcement in floor and ceiling construction with steel joists. Side ribs may be nested, forming an economical but effective overlap. Much used as a floor reinforcement and likewise for suspended ceilings, where its rib not only increases stiffness but furs out the lath from the channel, improving the plaster key.

Bostwick 3/4-in. Rib Lath has ribs spaced 4.8 in. apart, 6 to the sheet, and is used mainly as floor slab reinforcement. We do not recommend 3/4-in. Rib as a plaster base.

Sizes and Weights—The 3/8-in. Rib is furnished in standard size sheets in 3.0 lb., 3.4 lb., and 4.0 lb. per sq. yd. The 3/4in. Rib is furnished in .50 lb. and .60 lb., .75 lb. per sq. ft.

BOSTWICK STEEL STUDS AND BOSTWICK SYSTEM PARTITIONS

Supplementing its line of lathing products, Bostwick manufactures an unusually staunch steel stud. Especially designed to use with Bostwick "Truss-Loop" in a complete partition system, it is a general purpose stud of outstanding advantages that may be adapted to any partition requirement.

Made of four upright steel angles of 1/2x3/8-in. section, welded back to back, joined together horizontally by welded steel flats, it is extremely rigid and easy to install. The length of the flats determines the depth of the stud, which is furnished from 2 in. up, according to the architect's specifications.

Lath Can Be Nailed or Tied—A distinctive feature of the Bostwick Steel Stud is that lath can be nailed or tied over it with equal facility. Where custom or preference calls for a wire tie, the Bostwick Steel Stud offers a firm, convenient frame for the tie. But the cleft between the angles is just wide enough to admit a special nail, furnished for the purpose, which is wedged tightly under the impact of the hammer. Nailing is more rapid than tying and the stud therefore offers a saving in labor.

However the lath is attached, there is a distinct advantage in the ability to nail screed or ground strips to stud, insuring perfect contact.

Where it is desired to build cabinet work against stud construction, it may be conveniently nailed to Bostwick Steel Studs. This is accomplished either by nailing the fixture itself or the furring to which it is attached.

Flooring and Ceiling Attachments—A track is provided for ceiling attachment, which is similar to the stud, except that two (rather than four) angles are employed and its flat cross pieces are perforated for nailing, shall nailing be required. In most instances it will be tied to the ceiling channels.

The stud is attached to ceiling track by means of an adjustable shoe (patent pending) which interlocks snugly over the sides of the stud and by a twisting motion the lugs of the shoe automatically engage the track. The shoe is adjustable up to 3 in., which takes care of inequalities of uneven surfaces, and is slotted to enable nailing into stud.

The base of the stud is secured by means of a notched cross piece at the bottom and perforated for stud nails, where the floor is of cinder concrete, pre-cast gypsum, etc. Where the floor is of hard concrete, it is recommended that track be used and the notched cross piece will engage into the bottom runner.

The System Partition—The combination of the Bostwick Steel Stud and Super-Bostwick "Truss-Loop" Lath provides a partition system of unquestioned superiority. Its finished surfaces will be accurate, rigid, and exceptionally free from crack or strain. Both the stud and lath are mutually adaptable and therefore easy to install. The finished partition is fire-resistant, and has been accepted for use in fire-zones of many cities.

The Bostwick Stud offers ideal freedom in the installation of electric conduits and plumbing. The interior of the partition is open both vertically and horizontally. Cross members of the stud afford convenient means of support and attachment. This greatly facilitates work of mechanical trades.

BOSTWICK METAL LATH ACCESSORIES

Bostwick Corner Bead—Bostwick offers all types of corner bead—Truss-Wing, Expanded, Bullnose, Wide Flange and Scalloped. Truss-Wing offers exceptional qualities of rigidity and workability, especially for curved or arched plaster openings.

Bostwick Picture Moulding—Invisible, except for hook opening when installed, Bostwick Picture Moulding is a simple, easy-to-handle moulding.

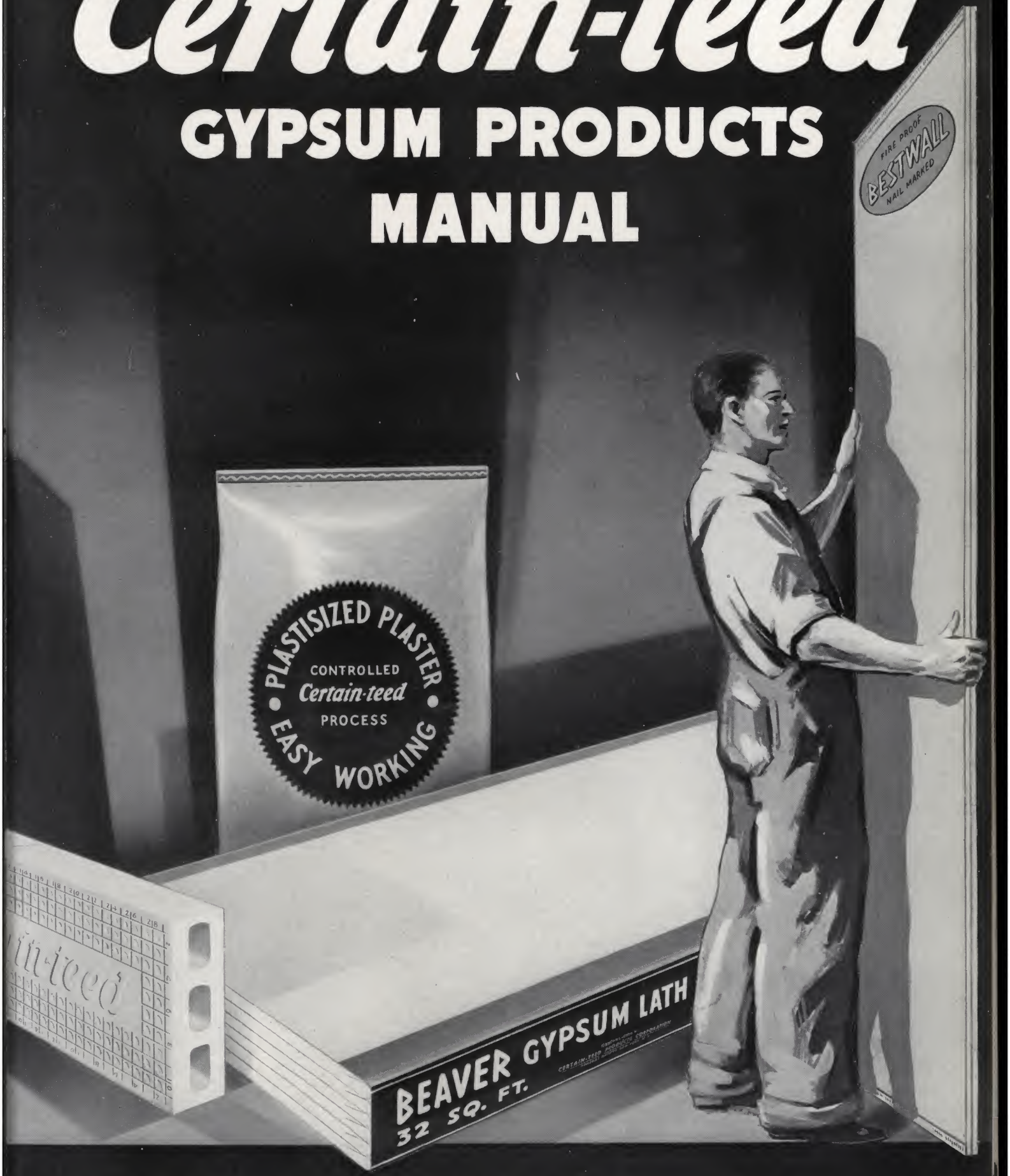
Metal Base Bead—Efficient for heavy service or uneven grounds, firm holding power, true alignment.

Bostwick Wall Plug—The ideal device for attaching interior trim to masonry walls. Supports weight without flattening, holds nails permanently.

A standard specification for all Federal Buildings under Supervising Architect of the U. S. Treasury Department.

Certain-teed

GYPSUM PRODUCTS MANUAL



CERTAIN-TEED PRODUCTS CORPORATION, General Offices, New York, N. Y.

GYPSUM PRODUCTS MANUAL

Certain-teed

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GYPSUM PRODUCTS

"PLASTISIZED" PLASTER
Fibred, Extra-Fibred, Unfibred, Sanded
Bond Plaster (For Use Over Concrete)
MOLDING—GAUGING—KEENE'S
GYPSUM PREPARED FINISHES
Gray or White Sand Float Finish
Gray or White Prepared Trowel Finish
PATCHING PLASTER
GYPSUM PARTITION TILE—CERTAIN-TEED
SOUND-ABSORBING PLASTER—KALITE
Kalite "H"—Kalite Hydraulic—Kalite Cast
GYPSUM WALL BOARD—BESTWALL
BESTWALL GRAIN BOARD
(Knotty Pine, Walnut)
METALLIZED BESTWALL GYPSUM BOARD
(Reflective Insulation)
INSULATING GYPSUM WALL BOARD
(Reflective Insulation)
GYPSUM LATH
Plain—Perforated
INSULATING GYPSUM LATH
(Reflective Insulation)
GYPSUM LINER BOARD
GYPSUM SHEATHING
DRY FILL INSULATION
BESTWALL JOINT SYSTEM
HYDRATED FINISHING LIME
MASONS' HYDRATED LIME

SALES OFFICES

ATLANTA
1111 Rhodes Haverty Bldg.

BALTIMORE
1310 Lexington Bldg.

CHICAGO
105 W. Adams Street

CLEVELAND
45 Prospect Avenue, N. W.

KANSAS CITY
12th and Crystal Streets

LOS ANGELES
1228 Produce Street

NEW YORK
100 East 42nd Street

EAST ST. LOUIS
17th Street and Broadway

SAN FRANCISCO
315 Montgomery Street

SEATTLE
1904 Third Avenue

PLANTS

Acme, Texas
Akron, N. Y.
Blue Rapids, Kansas
Fort Dodge, Iowa
Grand Rapids, Mich.
Gypsum, Ohio

WAREHOUSES

Charlestown, Mass.
Detroit, Mich.
Los Angeles, Cal.
Philadelphia, Pa.
Port Newark, N. J.
Richmond, Cal.

"PLASTISIZED" PLASTERS—BASE COATS

ACME **BEAVER**

Agatite ***Certain-teed***

"Plastisized" Plaster is an improved type of plaster made by Certain-teed under the brand names Acme, Agatite, Beaver, and Certain-teed. The exclusive Certain-teed controlled process of manufacturing "Plastisized" Plaster assures highly satisfactory walls when used according to directions.

"Plastisized" Plaster is available fibered for use as a first or scratch coat on wood or metal lath or for scratch and brown coats on all other types of plaster bases except concrete; also extra fibred for scratch coat on metal lath, and unfibred for scratch coat on gypsum lath, gypsum tile, and masonry, or for brown coats on all types of plaster bases except concrete.

Wood fibred plaster is available for use without sand or with one part of sand by weight. It mixes readily and produces exceptionally strong, hard walls having superior fire-resisting properties. It is used for scratch and brown coats on all types of plaster bases except concrete, and also for patching and repair work.

Sanded "Plastisized" Plaster is mixed with sand at the mill. It is supplied in fibred, unfibred, and wood-fibred types to be used for the same purposes as cement plaster for first or scratch coat and second or brown coat on all types of plaster bases except concrete.

Bond plaster mixes and spreads easily, and produces a hard, strong, fire-resisting, protective coat for use as scratch and brown coat *on concrete surfaces.*

COVERING CAPACITIES

Approximate Square Yardage Obtained With One Ton of Various Types of Plaster

Type of Plaster	Lath Gypsum	Metal Lath	Wood Lath	Gypsum Tile	Clay Tile or Brick
Neat*	225 to 240 Sanded 2 to 1	105 to 135 Sanded 2 to 1	180 to 210 Sanded 2 to 1	235 to 255 Sanded 3 to 1	165 to 200 Sanded 3 to 1
Wood Fibered	115 to 120 Mixed with water only. No sand.	55 to 65 Mixed with water only. No sand.	90 to 100 Mixed with water only. No sand.	182 to 210 Sanded 1 to 1	150 to 170 Sanded 1 to 1
Ready Sanded	75 to 80 Mixed with water only. No sand.	35 to 45 Mixed with water only. No sand.	60 to 70 Mixed with water only. No sand.	65 to 70 Mixed with water only. No sand.	45 to 55 Mixed with water only. No sand.
Prepared Trowel Finish	350 to 400 square yards per ton.				
Sand Float Finish	250 to 275 square yards per ton.				
Gauging Plaster	Will cover approximately 1600 square yards when proportioned: 2 tons hydrated lime to 1 ton of gauging plaster.				
Keene's Cement	As hard finish—400 lbs. Keene's Cement mixed with 100 lbs. lime putty will cover approximately 100 square yards.				

*Neat plaster is either fibered, extra fibered, or unfibered plaster to which sand must be added on the job.

certain-teed

Certain-teed

GAUGING—MOLDING—CASTING PLASTERS

Plasterers in most sections of the country are accustomed to use a slow set gauging plaster which is properly retarded at the mill for use with lime putty for a gypsum-lime putty trowel finish. In some sections of the country a quick set gauging plaster is used with lime putty, in which case it is usually necessary to add retarder to obtain the desired setting time. Small amounts of commercial retarder as supplied by the dealer, or small amounts of either unfibred plaster or screened fibred plaster are ordinarily used.

Satin Spar and Acme Gauging — Slow Set — Manufactured from the highest grade white western gypsum rock. Special grinding and processing provide easy working and mixing properties. When properly mixed with a high grade finishing lime, they assure a glossy, smooth, pure-white, flawless surface of uniformly excellent, satin-like texture. Retarder is added at the mill to provide the proper setting time for use with lime putty.

Blue Rapids Gauging Plaster—Quick Set—Similar to Satin Spar Finish in all respects except that it contains no retarder and is, therefore, quicker setting. Usually requires the addition of a small amount of retarder on the job. For spreading capacity see coverage table on page 3.

Directions for Use—(a) Mixing—Use either hydrated lime putty or thoroughly slaked quick-lime putty in the proportions of one measure of dry gauging plaster to three measures of lime putty. This is approximately equivalent to one part of dry gauging plaster to two parts of dry hydrated lime by weight. Make a ring of thoroughly hydrated lime putty on the mixing board, adding clean water in the center. Add the gauging plaster to the water. Allow to soak for a few minutes. Then mix to a creamy consistency and cut the lime putty thoroughly into the mixture, making a paste of uniform consistency.

(b) Applying—See Basic Specifications for Lathing and Plastering on pages 9 and 10.

Note: To soak hydrated lime fill water-tight box about two-thirds full of clean water. Sift lime gradually through a coarse screen, allowing it to settle under its own weight until the water is dried up and the lime fully soaked. Then supply enough excess water to furnish one to two inches of water over the lime. Soak over night in order to provide the required plasticity.

Sunflower Molding and Casting Plaster—Made from 99.0% pure gypsum rock eminently suited for the purpose, ground exceedingly fine and specially processed to make strong, hard, pure-white molds free from voids and pin holes. Under ordinary job conditions will set in from 15 to 25 minutes. Because of its superior quality and general dependability it is preferred by architects, contractors, and mechanics. It is cool working and especially suited for casting in gelatin molds. When mixed to plastering consistency the resulting dry casts will have a tensile strength of more than 500 lbs. per square inch and a compressive strength of more than 2,500 lbs. per square inch.

Used for ornamental work in hundreds of theatres, hotels, and palatial homes throughout the country. It is used for marble setting, statuary, and ornamental novelties—wherever a quick-setting, pure-white dense plaster is desired.

Certain-teed Statuary Casting Plaster contains a special case hardening material, giving a harder surface that resists abrasion and eliminates the need for a sizing coat when the casting is to be ornamented or painted.

Keene's Cement is a pure-white gypsum plaster which has been subjected to high temperature during calcination to give a plaster of great strength and hardness. It can be stored for years without deterioration. The regular grade is used for general plastering purposes and for the manufacture of caenstone and Travertine finishes, scagliola work, castings, and run moldings.

The fast finish grade is used with lime putty as a gauging plaster for smooth, white finish. Specify *Best Bros. Regular* or *Best Bros. Fast Finish.*

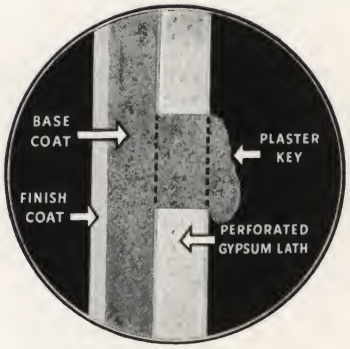
For *Hydrated Finishing Lime* and *Hydrated Mason's Lime* specify Certain-teed brands.

The map below shows the location of our famous Blue Rapids, Kansas, White Gypsum Deposit. Blue Rapids, Kansas and Acme, Texas, are the points where our High Purity White Molding and Gauging Plasters are made. For locations of other Certainteed Gypsum Plants, See Page 2 of this Section of Sweet's.

GYPSUM LATHS—INSULATING LATHS

Plaster Bases

Certain-teed manufactures a full line of plain and insulating plaster bases. These include Beaver Perforated Gypsum Lath, Beaver Gypsum Lath (plain), Beaver Insulating Gypsum Lath (Reflective Insulation), and Certain-teed Insulating Key Lap Lath (Cane Fibre), in addition to Certain-teed Gypsum Partition Tile.



PERFORATED GYPSUM LATH

Plaster is forced through holes and mushrooms out on the back of the lath to provide a mechanical key in addition to the natural bond of the lath and plaster, giving utmost strength.

Beaver Perforated Gypsum Lath

Perforated Gypsum Lath offers effective fire protection, having qualified for a one-hour fire rating with a considerable margin of safety. This lath holds the plaster with a double bond — a natural intermingling of the crystalline surface of the plaster with the fibre surface of the lath, and by mechanical keys as shown in the illustration at the left.

This double bond makes interior walls and ceilings not only stronger but also more resistant to cracks. The circular perforations are spaced 4 inches apart and each perforation is ¾" in diameter. When plaster is applied over this lath it is forced through these perforations and mushrooms out on the back of the lath, giving 48 of these keys to each sheet of lath.

Being made of gypsum, Beaver Perforated Gypsum Lath will neither burn nor support combustion, and in fact it protects the wood members to which it is applied. It works with the ease of lumber, is applied with nails, and can be sawed or scored along a straight edge and broken. Standard size is 16" x 48", ⅜" thick.

REFLECTIVE INSULATION

The aluminum foil surface available on Beaver Gypsum Lath provides efficient insulation without additional application cost. Specify Beaver Gypsum Lath with Reflective Insulation.

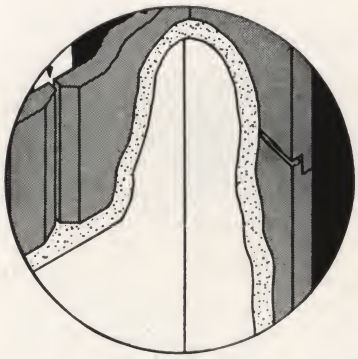
Beaver Gypsum Lath

Consists of a gypsum core strongly reinforced on both sides with specially prepared fibre surfacing which makes an ideal base for plaster. The strong, rock-like core of these closed edge lath panels provides exceptional structural value and support.

Gypsum lath is highly resistant to moisture. There is practically no shrinkage or expansion of the lath—an important feature since it prevents swelling or buckling and consequent cracking of the plaster. This form of lath is quickly applied, saves time (and the material forced through some forms of lath to provide keys), and does not spoil the set of the plaster by absorbing any quantity of water from it. The panels are light, easy to saw and nail, and readily fitted around openings and into odd shaped corners. Standard sizes are 16" x 32" and 16" x 48", ⅜" thick.

Beaver Gypsum Lath with Reflective Insulation

When using Beaver Gypsum Lath as a plaster base, you can provide insulation at trifling additional cost. This gypsum lath is available with an aluminum foil surface. Applied to exterior walls, this lath with its reflective insulation turns back most of the heat, keeping the house cooler in summer and saving fuel by retaining the heat in winter. Thus with no additional cost of application and with only slightly increased material cost, it is possible to provide both a plaster base and insulation. In addition to providing a plaster base and insulation, Beaver Gypsum Lath with Reflective Insulation gives the fire protection and exceptional structural strength of gypsum lath. It comes in ⅜" thickness, 16" x 32", or 16" x 48".



KEY LAP LATH

Certain-teed Insulating Key Lap Lath serves a dual purpose—as an efficient fibre insulation and as a high grade plaster base at one cost of application.

Certain-teed Insulating Key Lap Lath—Cane Fibre

Another insulating plaster base with quality features is Certain-teed Insulating Key Lap Lath. The key lap joint shown at the left gives plasterers what they have long desired—a deep, straight-side, easy-to-fill mechanical key along the horizontal joint. This key provides additional strength where it is needed—at the joints. The lath is a cane fibre product of high insulating value—rot-proof, vermin-proof and termite-proof. The lath can be applied much more quickly than ordinary lath, and in addition to the plaster base afforded gives great structural strength. As a plaster base, Certain-teed Insulating Key Lap Lath offers a smooth surface which gives a beautiful finished job on both walls and ceilings. Size of the sheets is 18" x 48".

Certain-teed

GYPSUM PRODUCTS MANUAL

KALITE SOUND-ABSORBING PLASTERS

Photograph Showing Surface of Kalite Plaster. Enlarged View Shows Great Porosity of Surface

Three types of Kalite sound-absorbing products are available. Kalite "H" Plaster is a highly cellular sound-absorbing plaster made of carefully graded and sized pumice of a special variety, mixed with calcined gypsum and other necessary ingredients. It is available in either natural gray or buff. If Kalite sound-absorbing plasters are to be decorated, consult the nearest Sales Office of CERTAIN-TEED PRODUCTS CORPORATION for recommendations.

Kalite Hydraulic Plaster is made of a pumice aggregate with Portland Cement binder, suitable for sound correction purposes where physical conditions require damp-proof construction, such as the walls and ceilings of steam kitchens, swimming pools, etc.

Kalite Cast is a quality material for plain and ornamental casting purposes. It combines high sound-absorbing properties with structural strength, sharp outline of arrises, decorative detail in the finished casting, and a pleasing texture and appearance. Available in five colors—natural white, sandstone, limestone, light buff, and medium buff.

On the job Kalite is mixed with water only and is then ready for application. Kalite mortar weighs approximately one-half as much as ordinary sanded gypsum plaster mortar, and furnishes a smooth or textured hard finish under the trowel.

For a full discussion of sound control, see Certain-teed Fiber Insulation Catalog in Sweet's.

Certain-teed GYPSUM PARTITION TILE

For Fire-proof, Non-load-bearing Construction Certain-teed Gypsum Partition Tile Offers Many Advantages

Certain-teed Gypsum Partition Tile is widely used and highly recommended for non-load-bearing fire-proof partitions and furring, stairway and elevator enclosures, walls in hotels, hospitals, office buildings, stores, and warehouses. It is also suitable for beam and column covering, pipe chases and ventilation ducts.

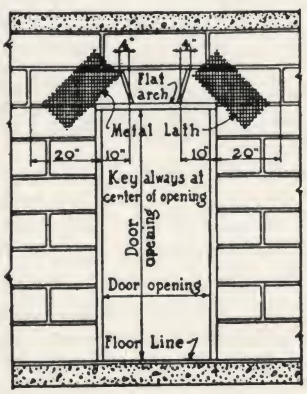
Certain-teed Gypsum Partition Tile, being very light in weight, permits worth-while savings in dead load. Each unit is 30 x 12 in.—2½ sq. ft. in area—requiring less mortar in setting. Uniformly even surfaces require a minimum of plaster. Certain-teed Gypsum Partition Tile is easily sawed to fit corners, pipe chases and conduits with practically no wastage. Alterations are quickly made in finished walls and much of the material can be salvaged for re-use. Grounds and bucks are readily attached by nailing with 10d nails or approved anchors.

Like other gypsum products, this tile is an ideal fire-proofing material, not only because it does not burn itself but also because it does not transmit heat. In composition it consists of set gypsum plaster reinforced with a small amount of fibre.

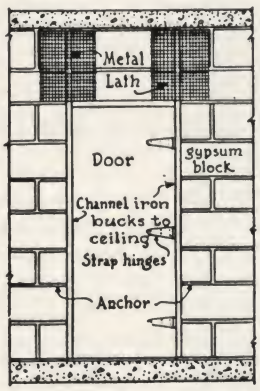
Standard Sizes

Length—30 in.
Width—12 in.
Thickness—Hollow Tile—3 in., 4 in. and 6 in.
—Solid Tile—2 in. and 3 in.

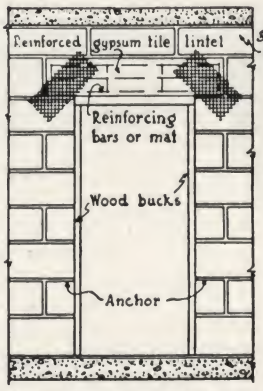
Details of Gypsum Partition Tile Construction



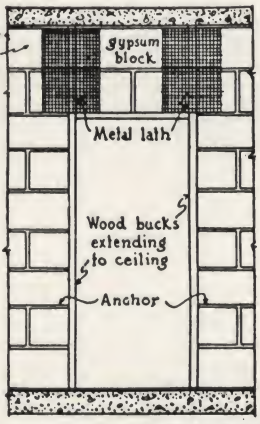
DETAIL SHOWING JACK ARCH CONSTRUCTION



DETAIL OF DOOR WITH CHANNEL IRON FRAME



DETAIL SHOWING REINFORCED GYPSUM LINTEL CONSTRUCTION



DETAIL SHOWING WOOD BUCKS

Certain-teed

GYPSUM PRODUCTS MANUAL

BASIC SPECIFICATIONS—LATHING AND PLASTERING

Notes: This specification is arranged to cover an installation of plaster on all types of lath and masonry surfaces. After various paragraphs will be found interpolated notes—which offer information and suggestions. Notes included in ( ) refer directly to preceding paragraphs.

Alternate specifications are suggested and will be found in small type in ( ) inserted after the proper clauses or section of the main specification paragraphs.

Note for Specification Writer: When writing a specification for a project at hand, it is only necessary to use the paragraphs that cover the type of construction contemplated. It may be necessary to slightly revise certain paragraphs to fit the individual requirements.

1—GENERAL

(a) The General Conditions of this specification are hereby made to constitute a part of the specification for Lathing and Plastering.

(See General Notes at end of specifications, Pars. (e), (f) and (g).)

(b) The contractor for plastering shall furnish all materials, labor and scaffolding necessary to completely finish the building in accordance with the intent of the drawings and of the specifications.

(c) The contractor for plastering shall examine all walls, furring, partitions, ceilings, etc., and see that they are in every case secure, true, and plumb or level. He shall report any which are not so to the General Contractor for correction before proceeding to apply any lath, or plaster. Failure to so report shall be taken as assumption of full responsibility for satisfactory conditions by the plastering contractor.

(For frame buildings all exterior and interior studding, all furring joists, rafters, collar beams, etc., will, of course, be specified under Carpentry where it is assumed they will be required to be placed properly and on the centers mentioned under General Notes paragraph (d)—namely: 16 in. for joists and studs and 24 in. for rafters and collar beams.)

2—EXTENT OF WORK AND EXCEPTIONS

(a) Unless otherwise specified and indicated on the drawings, the entire interior of the building shall be lathed and plastered or plastered on masonry, as hereafter specified.

(If any plastering is to be included in an outbuilding or elsewhere, it should be mentioned in Par. (a) unless to be separately contracted for.)

The drawing should distinguish between furred and unfurred masonry and the specifications for Masonry, Carpentry, etc., should likewise provide for the furring or studding out where installed. See General Notes Par. (c). If there are no masonry walls to be plastered, strike out reference in Par. (a).

(b) The plastering shall be the best three-coat work on all lath and two-coat elsewhere. The scratch and brown coats shall be carried down to the rough floor back of all bases, etc., and extended up on all walls of skylights, light wells, etc., unless otherwise provided under Exceptions. On ceilings or other surfaces where there are no grounds, the thickness of the lath and plaster shall equal the full thickness of the grounds specified for that lathing material.

(c) The wall surface in back of all tile wainscoting for walls shall be plastered with a scratch coat of cement mortar, consisting of 1 part Portland cement and 3 parts sand.

(In certain localities jurisdiction has allotted the scratch coat to the tile setters, in which case Par. (c) should be omitted. In this connection the "Basic Specification for Tilework" of the Associated Tile Manufacturers will be found very useful—2nd Edition 1924.)

(d) **EXCEPTIONS**—The only places not to be plastered are (list here locations) and all other spaces marked "not plastered" on the drawings (or, listed in schedule on drawings). No plastering will be required back of (list here such items as, marble, tile and brick wainscoting, etc.).

(In locations where the scratch coat is back of tile wainscoting or wall is conceded to the plasterers, the reference to tile in the list of Exceptions should be omitted.)

3—FURRING

Notes: For frame buildings the wood furring or wood suspended ceilings, to receive lath and plaster, should be included in the Specification for Carpenter Work.

For metal furring or metal suspended ceilings, see Standard Specifications issued by Associated Metal Lath Manufacturers, Inc., which cover all types of metal supports, furring, arches, beams, cornices and suspended ceiling construction. When the desired type of construction has been selected, the paragraphs should be inserted in this section of the Specification—III Furring.

Masonry furring consisting of various types of hollow fireproof blocks or tiles, etc., is of course, included in the specification for Mason Work.

4—LATHING AND PREPARATION OF SURFACES

GYPSUM LATH—

NOTE: **One-Hour Fire Rating**—Where this protection is desired, substitute the words "Beaver Perforated Gypsum Lath" for "Beaver Gypsum Lath."

For Insulating Lath—Where insulation in addition to the protection of Gypsum Lath is desired, substitute the words "Beaver Insulating Gypsum Lath Reflective Insulation" for "Beaver Gypsum Lath."

For Fiber Insulation Lath—Where a fiber insulation lath is desired, substitute in the specification the words "Certain-teed Insulating Key Lap Lath" for "Beaver Gypsum Lath."

GYPSUM LATH ("PLASTER BOARD")—(a) Lath with Gypsum Lath (Plaster Board) all studs, joists, etc., and all furred masonry throughout all portions of the building specified to be plastered.

(b) All Gypsum Lath shall be Beaver Gypsum lath, ⅜ (or ½) in. thick. Nailing edges shall have bearing not less than ⅝ in. on studs, joists, etc., with horizontal joints in walls and joints at right angles with ceiling joists broken at each board and with vertical joints on opposite sides of partitions not on the same studs. Lath shall be nailed at every support with nails spaced 4 in. apart. For ⅜ in. lath use 1⅛ in., 13 gauge, ⅜ in. head nails. For ½ in. lath use 4d common nails.

(c) Wherever any gypsum lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to gypsum lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(d) All grounds for gypsum lath shall be set so as to provide ½ in. of plaster over the lath and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

Certain-teed

BASIC SPECIFICATIONS—LATHING AND PLASTERING

5—CORNERS, ANGLES, ETC.

(a) Furnish and securely set at all external or projecting angles a stiff galvanized metal corner bead which is to run from top of base to ceilings, heads or beams, or to spring-lines in the case of any arches.

(If the Architect's experience warrants a preference for any particular corner bead, its name can be inserted. If it is desired to have chamfered or rounded corners, strike out reference to corner beads and insert a new paragraph accordingly—and add the "cornerite" of metal lath mentioned in the following paragraph (b).)

(b) In all vertical internal or re-entrant angles and in all angles between ceilings, soffits, and walls, partitions or furring, lightly attach, over the wood lath, "cornerites" made from strips of painted expanded metal lath cut 12 in. wide from sheets weighing not less than 2.2 lbs. per sq. yd. and bent into the shape of an "L" 6 in. on each side. "Cornerites" shall be fastened along each edge but shall not be fastened in the corner. All these angles shall be plastered square and straight along each edge but shall not be fastened in the corner.

(This reinforcement of angles by metal lath "cornerite" will tend to prevent or reduce cracks in the angles. When gypsum lath is specified, change the words "wood lath" to "gypsum lath." When metal lath is specified, this paragraph should be stricken out.)

6—METAL BASE SCREEDS OR GROUNDS, PICTURE MOULDS, ETC.

Notes: Special metal, base screeds, grounds, moulds, coves; complete metal bases with or without electric wire-ways; metal picture moulds, chair rails, door and window trim, etc. Where such items are desired they should be included in the proper trade specification as required by local trade jurisdictions.

Where the installation of any or all of the above will cause special conditions or requirements in the plastering or lathing work, suitable paragraphs should be inserted in this section of the specification under a suitable heading.

7—MATERIALS AND MIXING

PLASTER—(a) All plasters shall be Certain-teed Brands:

Base Coat Plasters—Certain-teed, Beaver, Acme, Agatite.

Prepared Finishes—Certain-teed, Beaver.

Gauging Plasters, White—Satin Spar, Acme, Blue Rapids.

Gauging Plasters, Common—Certain-teed, Beaver, . . . as manufactured by the Certain-teed Products Corporation, or other plaster if approved in writing by the Architect.

(If other than the types of Certain-teed brands of plaster on which this specification is based are to be used, modify Par. (a) accordingly.)

SAND—(b) All sand for base coats shall be clean and sharp, free from alkali, salt or quicksand and from objectionable amounts of loam or clay and shall be graded from fine to coarse, and when dry, all shall pass a No. 4 sieve, not more than 10% by weight shall be retained on a No. 8 sieve; not less than 70% by weight shall be retained on a No. 50 sieve, and not more than 5% by weight shall pass a No. 100 sieve. These sieves shall meet the specifications given in the Bureau of Standards' Standard Screen Scale. (See American Society for Testing Materials Specifications for Gypsum Plastering Sand, Serial Designation C35.)

(If any sand float finish is to be included (see Finishing Coat, Pars. 8 (b5) and (b5a)), the sand for this coat should be specified in paragraph above.)

MIXING—(c) All plaster shall be mixed with clean water in clean, tight boxes and in accordance with best local practice, the intent of these specifications, and the directions of maker on file in office of the Architect.

(Mixing and the importance of clean water and directions of the market is of vital importance to good work.)

8—PROPORTIONS AND APPLICATION

The specification below is for plaster of the regular thickness of the grounds applied in three coats.

In some parts of the country and under certain conditions, plaster is applied to the thickness of the grounds in two coats. Provision is therefore made at the end of this Section 8 for such plastering under the heading "Two-coat Work."

THREE-COAT WORK

ON GYPSUM LATH—(a) **First or Scratch Coat**—Shall be one part fibered plaster, to not more than two parts, by weight, of dry sand.

(b) The lath shall not be wetted before plaster is applied. First coat shall be thoroughly applied and the plaster worked well into the joints and the surface shall be scratched or scored to provide a bond for the second coat.

(c) **Second or Browning Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(d) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON WOOD LATH—(a1)—**First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b1) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. First coat shall be applied with sufficient pressure to fill all spaces between lath and obtain good key, leaving a light coat over the lath, and the surface shall be scratched or scored to provide a bond for the second coat.

(c1) **Second or Browning Coat**—(Same as Par. (c) above.)

(d1) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

ON METAL LATH—(a2) **First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b2) First coat shall be applied with sufficient pressure to fill all meshes and obtain good key, leaving a light coat of plaster over the lath and the surface shall be scratched or scored to provide a bond for the second coat.

(c2) **Second or Browning Coat**—(Same as Par. (c) above for Gypsum Lath.)

(d2) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON MASONRY—(a3) **Base Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(b3) The surface of all unfurred brick, hollow tile or concrete block walls shall be wetted before plastering is begun when necessary to kill excessive suction. The plaster shall be applied to a thickness of ⅝ in. beyond the wall face in two operations. A thin layer shall first be applied with strong pressure to secure a good bond and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(Provision is made in the above specification for plastering on rubble masonry or on poured concrete. The first, it is presumed, will never be done without furring and the latter is covered in the following paragraphs.)

Certain-teed

WOOD LATH AND LATHING—(a1) Lath with wood lath all studs, joists, etc., and all wood furred masonry walls throughout all portions of the building specified to be plastered.

(In cases where any masonry is to be plastered direct or where exterior walls are entirely of frame, paragraph (a1) above or in the specifications for "Gypsum Lath" or "Metal Lath" should be modified accordingly.)

(b1) Wood lath shall be of good merchantable quality, non-staining, and free from loose knots. All lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart and shall be laid at right angles to supports. All ends of lath shall have solid bearing and all lath shall be well nailed to each support with 3d lathing nails. A space of ¼ in. shall be left between abutting ends of lath. Joints shall be broken not more than every seven laths. No lath shall be carried through from one room to another.

(In some cases this specification for wood lath may not be considered sufficient and the Architect should revise paragraph (b1) in accordance with the Standard Grading Specifications issued by the Lumber Manufacturers Association functioning in the locality where the work is situated.)

(c1) Over any heat pipes concealed in walls or partitions furnish and install strips of gypsum lath at least ¼ in. thick or painted expanded metal lath or wire lath well secured, with good bearing, at nearest supports. Wherever any wood-lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to wood lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(In some localities it is customary to specify the lathing-in of heat pipes as a part of the heating contractor's work, in which case provide accordingly and modify this paragraph. When gypsum lath or metal lath is specified, this paragraph should be stricken out.)

(d1) Over the heating plant in basement and extending 3 ft. beyond its outlines, and of smoke pipe to wall, furnish and securely install gypsum ⅜ in. thick or painted expanded metal lath or galvanized wire lath weighing not less than 3.0 lbs. per sq. yd.

(The Committee on Building Construction of the National Fire Protection Association recommend the protection of woodwork over heating apparatus and over fuel storage (other than anthracite). The above paragraph is suggested as a minimum.)

(e1) (See note following.)

(For other uses of incombustible lath, if any are desired to replace wood lath in special locations, describe in this space.)

(f1) All grounds for wood lath and lathing shall be ¾ in. thick and will be furnished and installed as specified under Carpentry. Thickness of grounds includes the thickness of the lath.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

METAL LATH—(a2) Lath with metal lath, all wood studs, joists, etc., back of all tile wainscoting (or walls), and all furred masonry walls (or all steel studs, beams, metal furring, metal suspended ceilings, etc.) throughout all portions of the building specified to be plastered, including all arches, beams, cornices, etc.

(b2) **For Walls, Furring and Partitions and Wood (or Steel) Supports Spaced 16 in. or Less on Centers**—Painted expanded metal lath weighing not less than 2.5 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists (or Wood Furring) (or Metal) Spaced 16 in. or Less on Centers—Painted expanded metal lath weighing not less than 3.0 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists, Rafters or Collar Beams (or Wood Furring) (or Metal Furring) Spaced 24 in. on Centers—Painted expanded metal lath of the rib type weighing not less than 3.5 lbs. per sq. yd. shall be used.

(c2) Metal lath shall be applied with the long dimension of the sheet across the supporters. Sheets shall be lapped at sides not less than ½ in. and at ends not less than 1 in.

(d2) Sheets shall be attached to wood supports by not less than 6d nails or by 1¼ in. No. 14 gauge wire staples; either of these shall be driven to a penetration of not less than ⅞ in. and be spaced not to exceed 6 in. on centers. Nails shall be driven on a slant, alternating the slant of adjacent nails, and be bent over at least one strand of the lath.

Note: For fireproof building the following paragraph (d2a) should be used instead of paragraph (d2).

(d2a) Sheets shall be wired to all metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galv. soft annealed wire.

(e2) All horizontal laps of sheets on sidewalls shall be tightly tied at least once between supports, and side laps on ceilings shall be tied twice between supports with No. 18 gauge galvanized soft annealed wire.

End laps shall generally occur only over supports; if between supports, sheets shall be securely laced every 6 in. with wire just described. At internal angles the lath on one wall shall be extended on the adjoining wall not less than 15 in. beyond the corner (to the nearest support).

(f2) Wherever any walls, partitions or ceilings abut unfurred masonry, the metal lath shall be extended at least 6 in. on to the masonry and be well secured at the edges into the joints.

(g2) All grounds for metal lath shall be ¾ in. thick and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

OTHER LATHING BACKGROUNDS—Various types of wire meshed materials and wood, with and without paper backgrounds, and other special patented lathing materials are on the market. No attempt is made to provide for these in this specification. When their use is considered, the manufacturer's data should be consulted.

MASONRY SURFACES—Provision should be made under "Mason's Work" for all joints to be rough struck in brick, hollow tile, gypsum, or concrete block walls which are to be plastered direct.

(a3) The surfaces of all unfurred masonry to be plastered shall be brushed clean with a wire brush and shall be free from oil, grease, soot or projecting mortar.

(b3) Any low places shall be filled out and any unevenness of walls shall be straightened with unfibered plaster ahead of the base coat.

(c3) All grounds for brick, hollow tile and concrete block walls shall be ⅝ in. thick, and ½ in. thick for gypsum partition tile. Grounds will be furnished and installed as specified under Carpentry.

(When any of the masonry mentioned above is not to be used in the building specified, the reference to it may be stricken out.)

ON POURED CONCRETE—

All concrete surfaces which are to be plastered, should be put in condition to receive and retain the plaster coats.

(a4) All concrete surfaces to be plastered shall be treated as follows: Remove with a wire brush all dust and loose particles. Grease, oil or efflorescence shall be washed off with a solution of one part of commercial muriatic acid to four parts of water, and the surface so treated, washed again with clean water.

(b4) Smooth and dense surfaces shall be hacked so as to provide a rough base or background for the plaster. Plastering upon smooth concrete surfaces, which are first covered with so-called waterproof paints or compounds will not be allowed.

(c4) **Base Coat**—Shall be Certain-teed or Beaver Concrete Bond Plaster used neat with only the addition of water. The base coat shall consist of one or more thin coats sufficient to straighten the walls and ceilings and shall be applied with great pressure to secure a good bond. If necessary to apply in two coats, double back with the same material. The plaster shall be not less than ⅛ in. nor more than ⅜ in. in thickness, exclusive of the finish coat. The surface of the base coat shall be broomed or otherwise roughened to receive the finishing coat.

(If Bond Plaster is to be used as specified above, revise Par. 7 (a) to include the name of manufacturer and brand.)

Finishing Coat—(a5) Smooth White Finish shall be one measure of Gypsum Gauging Plaster to not more than three measures of perfectly slaked fresh burned plasterers' lump lime putty or standard hydrated finishing lime putty thoroughly and uniformly mixed.

Certain-teed

If it is desired, a prepared gypsum, finishing plaster may be used for the smooth white finishing coat, in which case substitute the following paragraph and revise Par. 7 (a) accordingly.

(a5a) Smooth White Finish shall be Certain-teed or Beaver Prepared Trowel Finish Plaster mixed to the proper consistency with clean water only.

(b5) Finishing coat shall be applied throughout the building except behind base and any place under Exceptions in Par. 2 (d) and shall be smooth white finish troweled to a dense, true surface.

Note: If "Sand Float Finish" is desired in some locations instead of "Smooth White", add one of the following paragraphs after, at end of Par. (b5), noting the exceptions and giving the locations.

(b5a) Sand Float Finish shall be four parts Gypsum Cement Plaster unfibered, one measure of perfectly slaked fresh burned plasterers' lump lime putty or standard finishing hydrated lime, and five measures of clean, sharp sand.

(b5b) Sand Float Finish shall be Certain-teed or Beaver Sand Float Finish Plaster mixed with water only.

(c5) (See note following.)

Note: This specification does not contemplate that colored, textural or special effects will be required as a finish in any portion of this building. If so, insert here the required paragraphs giving the location and description.

(d5) Finishing coat shall be applied when the base coat is set firm and hard and nearly dry. The surface of the base coat shall be sprinkled with water before the finish coat is applied when necessary to kill excessive suction.

(e5) All finishing coats throughout shall be applied and finished in the most workmanlike manner and shall be left plumb or level and true and even planed, free from trowel marks, blotches and without joints showing.

(f5) All finished plastering shall be protected from wind until set. In freezing weather, the contractor shall arrange with the General Contractor that plastering shall be protected from frost until set hard and thoroughly dry.

(In windy, hot, dry weather, openings should be screened but not closed. In all clear weather after plastering has set, doors and windows should be kept open as fully as possible.)

TWO-COAT WORK

For cautionary notes regarding "Two-coat Work" and its undesirability on certain backgrounds, read the following:

Circular No. 151 of the Bureau of Standards entitled "Wall Plaster, Its Ingredients, Preparation and Properties" states in part regarding two-coat work:

"'Double-up', 'laid-off', or 'laid-on' work, as it is variously called in different localities, means the application of the scratch and brown coats together, or at least without permitting the usual time to lapse between them. The scratch coat is applied in the way specified above, but it is not permitted to harden, nor is its surface scratched. The application of the brown coat is started immediately after finishing the application of the scratch coat. This method is obviously cheaper than straight three-coat work, but certain precautions are essential to its successful use. The brown coat must be applied before the hardening of the scratch coat has progressed far enough to produce a glazed surface. The backing must be sufficiently rigid of itself that it will not yield under pressure of the trowel, and it will not sag under the weight of the combined coats. If it deflects to any appreciable extent, the keys which hold the scratch coat to it will probably be broken, and if it sags it will be found extremely difficult to bring the brown coat out to a true plane surface. For these reasons, doubled-up work shall not be applied to metal lath. Its use on wood is not recommended, particularly if the plaster is to be ⅞ in. thick. On masonry backings the use of doubled-up work is largely a question of application—if the plasterer succeeds in making the plaster stick and is able to form a true plane surface, the work will be satisfactory. This depends on the thickness of the plaster and the nature of the backing. It is difficult to apply a doubled-up coat of a thickness greater than ⅝ in. The great suction exerted by gypsum tile makes the application of doubled-up work easy; on clay tile it is almost impossible."

ON GYPSUM LATH—

For two-coat work on "Gypsum Lath", specify as follows, substituting the proper paragraphs as noted:

(a6) (Same as Par. 8 (a).)

(b6) The boards shall not be wetted before plaster is applied. Base coat shall be applied in two operations—a thin layer of plaster shall first be spread under pressure over the boards and the plaster worked well into the joints. This shall be immediately followed with a second layer which shall be straightened to a true and even plane, keeping back sufficiently from the grounds to allow for the finishing coat. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c6) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

ON WOOD LATH—

If two-coat work on wood lath is desired, specify as follows, substituting the proper paragraphs as noted:

(a7) (Same as Par. 8 (a).)

(b7) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. Base coat shall be applied in two operations—a thin layer of plaster shall first be applied with sufficient pressure to fill all spaces between lath and obtain a good key and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c7) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

ON MASONRY—(a8) For two-coat work on brick, hollow tile or concrete block walls, same as Pars. 8 (a3) and (b3).

(b8) **Finishing Coat**—(Same as Pars. 8 (a5) to (f5).)

9—ARCHES, BEAMS, CORNICES, MOLDINGS, ETC.

(a) Wherever any arches, beam effects, corbels, etc., are indicated on the drawings, the same shall be fully formed with plaster in strict accordance with detailed drawings. All to have sharp arrises.

(If arches, beams, etc., are to be included, they will of course, be specified to be built or formed by the Carpenter for wood frame construction. If not, they should be built of metal lath and fully described in Par. 4 (a2). If more ornamental features are intended, amplify. If not to have sharp arrises, change to chamfering or rounding.)

(b) Wherever any cornices, moldings or other ornamental plastering features are shown or indicated on the drawings, they shall be run straight and true, as detailed, with Sunflower or Acme Molding Plaster, or may be pre-cast, securely set and anchored without joints showing. All moldings and lines shall make true intersections and be neatly mitered at angles. The girths of cornices and sizes of molds shall be as follows:

(Here allocate and describe.)

(If no cornices, moldings, etc., are to be included, strike out this section in specification. If to be included, and if large enough in girth or size to require forms, mention the same for cornices, beams, etc., in Carpenter's Work or Metal Furring and Lather's Work.)

10—BLANK HEADING

(This space is suggested so that the Architect may include provisions for plastering of window jambs, or reveals where not of wood, any special plastering or finishing in toilet rooms, bathrooms, kitchens or laundries, etc., the plastering of any outbuilding, any "water-proofing," etc., and clauses regarding guarantee or conduct of work or such other special items as may apply to the particular structure in hand which are not provided for under other headings.)

11—PATCHING AND COMPLETION

(a) The contractor for plastering shall at all times keep the premises clean of loose mortar and rubbish resulting from his work and shall neatly patch or otherwise make good any damaged plaster after the various trades have left the building.

(It has been found in practice and as a matter of justice that both patching and waste can be avoided if provision is made for the plastering contractor to be paid for patching by the trade causing the damage. This paragraph can be amplified as desired by the Architect to conform to his experience or trade custom of the locality.)

(b) The whole of the work shall be completed to the satisfaction of the Architect and all shall be left perfectly straight, true and level or plumb, free from waves, cracks, blisters and defects of any kind, or be replaced until it is.

12—STUCCO

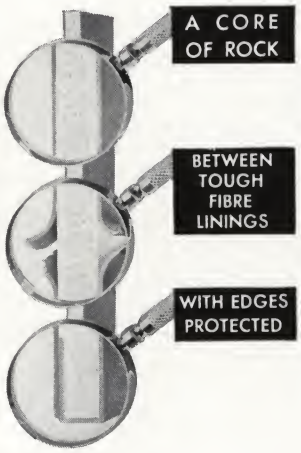
(If any exterior plastering is to be done, here enumerate and describe.)

(For exterior plastering, or Stucco, the Specification for Lime Stucco of the National Lime Association and for Cement Stucco of the Portland Cement Association will be found very useful.)

GYPSUM PRODUCTS MANUAL

GYPSUM WALLBOARD AND SHEATHING (Special Types)

Bestwall Gypsum Wallboard



Bestwall Gypsum Wallboard comes in smooth, solid sheets of special gypsum mix molded between sheets of long fibered, heavy paper. It is a closed-edge board which comes in ¼ in., ⅜ in., and ½ in. thicknesses, 32 in., 36 in., or 48 in. in width, and 4 ft. to 12 ft. in length.

Bestwall, the Original Gypsum Wallboard, is useful for walls, ceilings, and partitions in new construction, remodeling, or repairing. It may be sawed and nailed like lumber and may be nailed to studs and joists or over old or new construction. It will not warp or buckle and is vermin-proof, resistant to moisture and climatic changes. When desired, attractive paneling may be applied, the wood strips being placed so as to cover the joints.

Recessed Edge—Bestwall Gypsum Wallboard is available with a recessed edge which permits construction of smooth walls without noticeable joints. The invisible joints are obtained through the use of Bestwall Joint System.

Fire-Resistant—Bestwall Gypsum Wall Board is highly resistant to fire. In tests it has withstood for 15 minutes the heat of a Meeker Burner (1200° to 1500° F.) applied to one face, with only slight damage to the opposite surface.

Exclusive Advantages—Bestwall Gypsum Board has two exclusive features—Nail-Marking and a method of packing which assures the delivery of sheets with a clean face. Nail-Marking saves at least 10% of the application time by eliminating the need for measuring and ruling to indicate where to nail to hit studs. A row of inconspicuous dots shows the workman where to find studs on either 16 in. or 24 in. centers.

The two outer dotted lines are spaced to indicate the stud center on 16 in. spacing. The center line spots the spacing when the studs are 24 in. on center. The dots are spaced 3½ in. apart. In nailing on side walls, space nails 3 dots apart or 10½ in. and on ceilings 2 dots apart or 7 in. The dots are heavy enough to be seen but do not mar the board in any way.

Beaver Gypsum Sheathing

This is an ideal material for exterior sheathing on frame buildings under siding or clapboards, shingles, brick veneer or stucco. It is applied with the length of the sheathing at right angles to the studs.

It is ½ in. thick with a solid fire-proof core of gypsum encased in a tough, water-resistant fiber covering. The long edges are V-tongued and grooved which stiffens the unsupported edges when installed. The joints do not open up as gypsum sheathing does not shrink or expand. This gypsum sheathing has given ample proof of its structural bracing strength in comparison with diagonal wood sheathing.

Bestwall* Grain Board—Knotty Pine Finish—American Walnut Finish

Bestwall Grain Board is useful in homes for the construction of playrooms, libraries, bars, etc., as well as in offices, in store windows, and store displays. It makes possible in a fire-proof material, effects like those of wood panelling. It is useful for remodeling work as well as for new construction.

The core of Bestwall Grain Board is carefully selected gypsum rock—the same used for Bestwall Gypsum Wallboard. This gives Bestwall Grain Board the advantage of strength and fire-protection as well as freedom from warping or shrinking.

Bestwall Grain Board comes in sheets of ⅜ in. thickness, 48 in. wide, and 8 ft., 9 ft. and 10 ft. long. It comes in two finishes, Knotty Pine and American Walnut, each of which affords an accurate reproduction of the genuine wood grain. The Knotty Pine finish is the type illustrated at the left.

Metallized Bestwall* Gypsum Board

(Reflective Insulation)

Metallized Bestwall Gypsum Board comes in sheets of ⅜ in. thickness, 48 in. wide and 4 ft. to 12 ft. long. Its metal foil surface gives it all the special advantages of reflective insulation, with the strength and fire-protection of all Bestwall Gypsum Boards.

This Metallized Gypsum Board is useful in many places in the home, both in new construction and in remodelling. It contributes to the comfort as well as the fire-protection of any structure in which it is used. It helps to keep rooms cooler in summer and warmer in winter, and its insulating value aids materially in the reduction of expenditures for fuel.

The core of Bestwall Gypsum Board (Reflective Insulation) is carefully selected gypsum rock—the same used in other Bestwall Gypsum Boards.

*Trade Mark.

certain-teed

THERE'S A CERTAIN-TEED PLANT NEAR YOU

THE CONSOLIDATED EXPANDED METAL COMPANIES

Metal Lath and Lathing Accessories

WHEELING, W. VA.

SALES OFFICES AND WAREHOUSES

ATLANTA, GA. BOSTON, MASS. BUFFALO, N. Y. CHICAGO, ILL. CLEVELAND, OHIO DETROIT, MICH. HOUSTON, TEX. NEW YORK, N. Y. PHILADELPHIA, PA. PITTSBURGH, PA.

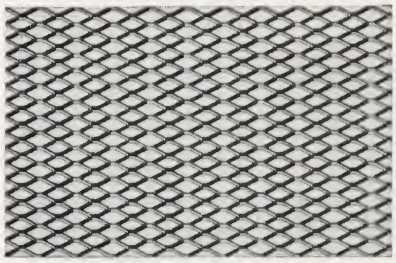
Products

Diamond Lath, Arch Lath, Two-Mesh and Three-Mesh Lath, ⅜ in. Rib Lath, ¾ in. High Rib, Combination and Jumbo Laths; Stucco Binder; Wide Apron, Wing Type, Bullnose and Expanded Corner Bead; Plain and Curbed Base Screeds; Cornerite; Cold Rolled Channels.

Picture Mould, Hank Tie Wire, Stub Nails, Wall Ties, Wall Plugs, Wing Bead Clips; Coal Doors; Ash Pit and Clean-out Doors.

For other Steelcrete pages, see File Index.

Steelcrete Diamond Lath



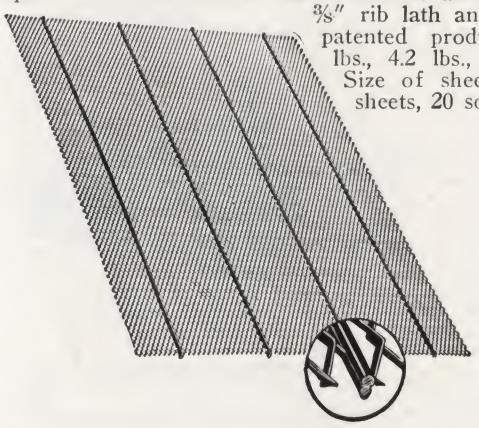
Steelcrete Diamond Lath is the stiffest lath of its type manufactured. All sheets are flat and have perfectly straight and parallel sides. Size of sheet, 27x96 in.; packed 10 sheets per bundle, 20 sq. yds.

Furnished in weights 3.4, 3.0, 2.5 and 2.2 lbs. per sq. yd. Also galvanized in weights 3.4 and 2.5 lbs. per sq. yd.

Steelcrete Diamond Lath, unless otherwise specified, is always coated with our special dip. Dip adheres closely, giving lath a thin coating impervious to rust.

Steelcrete Bar-X-Lath

Bar-X-Lath—the Diamond Mesh Lath which is reinforced with solid steel ribs consisting of four pairs of No. 11 rods spaced on 7-in. centers. Bar-X-Lath is an improved type of ⅜" rib lath and is an exclusive patented product. Weight—3.4 lbs., 4.2 lbs., 4.6 lbs., painted. Size of sheets—27x96 in. 10 sheets, 20 sq. yds. per bundle.



Combination Lath

Any weight of Diamond or Bar-X-Lath can be furnished with paper backing.

Two styles of paper are available, perforated or plain, as follows:

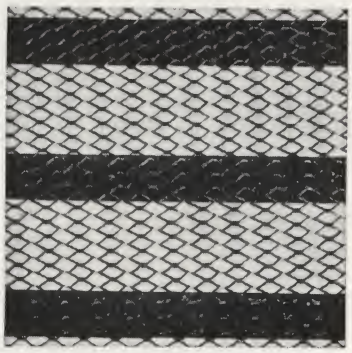
Waterproof insulation — designated as "W."

Kraft insulation — designated as "K."

Each of the above types are furnished:

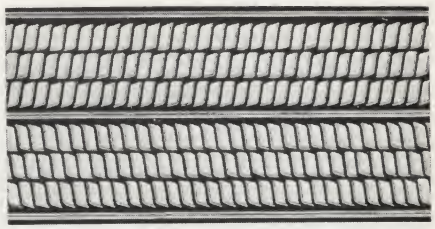
Perforated for "Tie-On" work—designated as "T."

Unperforated for "Nail-On" work—designated as "N."



Steelcrete "3-Mesh" Flat Rib Lath

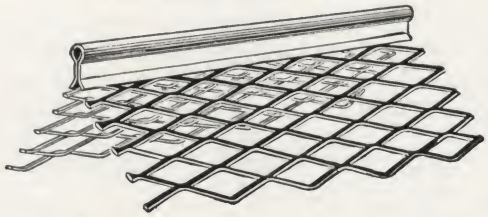
This new type of flat rib lath is remarkably efficient for binding and reinforcing plaster. The openings between the strands are small, giving a uniform reinforcement and positive bond over the entire surface covered.



Weight: 2.75 lbs., 3.0 lbs., 3.4 lbs., painted; 3.6 lbs., galvanized.

Sheets, 24x96 in.; 9 sheets, 16 sq. yds. per bundle.

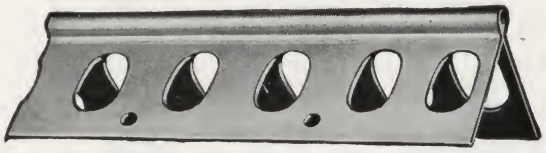
Expanded Corner Bead



The expanded metal wing permits the plaster to key through to the lath beneath and form a strong bond.

Lengths: 6, 7, 8, 9, 10 and 12 ft. 26-gauge, galvanized. Weight: 2½-in. wing 230 lbs. per 1000 lin. ft.; 5-in. wing 430 lbs. per 1000 lin. ft. Packed 500 lin. ft. per crate.

Wing Type Corner Bead



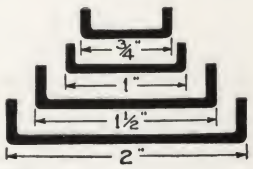
Makes a strong rigid outside corner. Plaster cannot pull away from corners reinforced with this bead.

1½-in. wing. Lengths: 6, 7, 8, 9, 10 and 12 ft. Weight: 176 lbs. per 1000 lin. ft. 26-gauge, galvanized. Packed 100 pieces per crate.

Cold Rolled Channels

Cold Rolled channels for use in suspended ceilings, furring and studding.

Size, in.	Gauge	Wt. 1000 lin. ft., lbs.
¾	16	332
1	16	332
1½	16	442
2	16	553



Stock lengths, 16 and 20 ft.
¾ and 1-in. channels shipped 25 pieces bundle.
1½ and 2-in. channels shipped 10 pieces bundle.

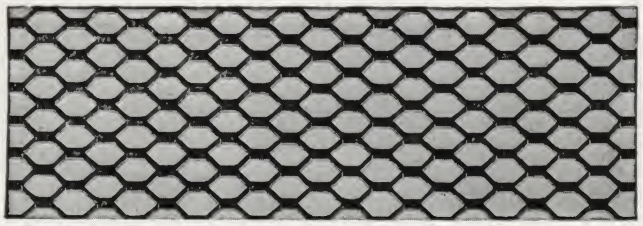
THE GOLDSMITH METAL LATH CO.

Manufacturers of Steel Building Materials for Concrete and Plastering

CINCINNATI, OHIO

STEEL BUILDING MATERIALS

Goldsmith Flat Diamond Mesh Lath—This lath designed so that mortar spreads with ease, thoroughly embedding strands. No sagging of lath—excessively wet mix for keying unnecessary; result, plaster saving with minimum of droppings. All lath sheets trimmed square at ends—lay perfectly flat—easier to tie to furring. Sheets 27x96 in.; 2 sq. yds. per sheet. Strands 1/8 in. wide—small openings—great stiffness. Also furnished in Self-furring, Cornerlath and Lath Strips. Supplied in weights of 2.2, 2.5, 3, 3.4 lbs. per yard, of grades, finish and

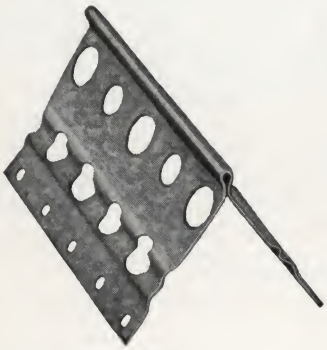


quality conforming with Department of Commerce Simplified Practice Recommendation R3-36 effective July 1st, 1936, and complying with Federal Specification QQ-B-101b.

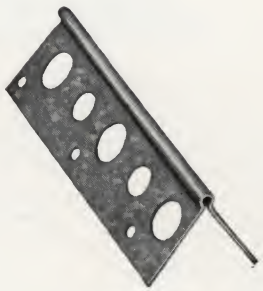
Other Goldsmith Expanded Laths—Flat Rib in 2.75, 3, 3.4 and 4 lbs. per yard; 3/8 in. Rib Lath in 3, 3.4 and 4 lbs. per yard; 3/4 in. Rib Lath in .46, .56 and .74 lbs. per sq. ft. All of these laths produced to conform to Department of Commerce Simplified Practice Recommendation R3-36 effective July 1st, 1936, and Federal Specification QQ-B-101b.

Phoenix Metal Lath—A 3/8 in. rib plate lath, intermediate Shurebond and Clincher. Applicable wherever ordinary 3/8 in. Rib Lath used. A much higher quality product and very economical. Weight 4.85 lbs. per yard.

Corner Beads—Furnished in 26 or 24 ga. galvanized in lengths of 6, 7, 8, 9, 10 and 12 ft. No. 5 eliminates clips—2½ in. flanges—specified regularly by Government Departments. No. 3 is regular stock bead with 1¼ in. flanges.



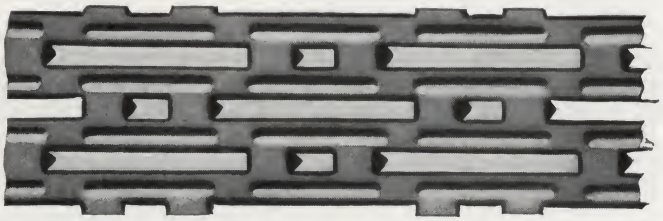
No. 5



No. 3

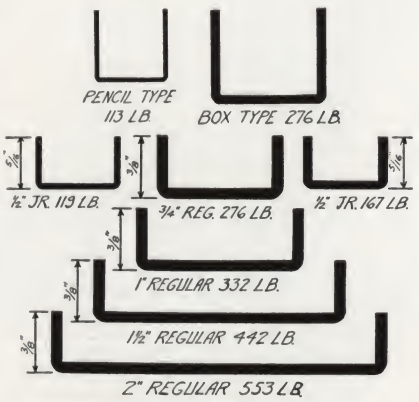
All kinds and types of corner beads, base screeds, picture mould, etc., are part of the complete Goldsmith line of Plastering Specialties. Write for samples and literature of other specialties you are interested in. For obtaining straight protected corners, specify "GOLDSMITH".

Clincher Metal Lath—A flatrib plate lath. A standard commodity successfully merchandised for over 40 years. Ideal as a backing for marble and tile work. As a plaster base—greater rigidity, longer life, lower cost of finished work. Equally efficient for nailed or tied on work. No metal sheared away—webs around perforations, truss shaped which overlap, stiffening the sheet—heavily beaded. Sheets 27x96 in.; 2 sq. yards per sheet. Weight 4.5 lbs. per yard.



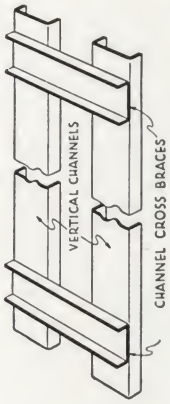
Shureband Metal Lath—Permanency with real structural value. A perforated plate with 3/8 in. dovetail ribs 4 in. o.c. Weights 5.63, 7.2, 9 and 11.25 lbs. per yard. For solid plaster partitions and suspended ceilings, prevents sound transmission. Unexcelled as a Self Centering, for top and short span concrete slabs. Load carrying tables and literature upon request. For lighter duty, made as 4-Rib Shurebond with 3/8 in. channel ribs 8 in. o.c. in weights of 5, 6.3, 7.56 lbs. per yard.

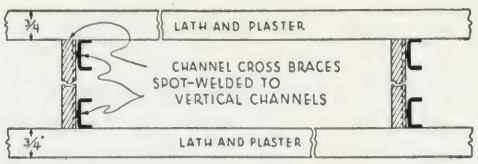
Goldsmith Cold Rolled Channels—These have sharp bends and are absolutely straight. Load carrying tables furnished upon request. Stock lengths 16 and 20 ft.—other lengths on special order. *Note:* ½ in. Jr. Channels individual with us—ideal for brackets and light furring.



Inserts—We are pioneers in developing inserts for hanging ceilings and for attaching every conceivable type of furring and/or lath to concrete and brick work. Write for other types.

Other Products—Leasing of heavy gauge *Removable Metal Forms* for forming concrete joists. *Sleeper Clips* for attaching wood floors to concrete—made in 20 and 18 Gauge painted or galvanized for 2, 3 or 4 in. wood sleepers.





Shurebond Built-up Studs—Have two vertical channels, spaced apart with channel cross braces all rigidly welded together, thus forming a complete unit.

Any thickness hollow partition can be obtained. Erect the Studs in the same manner as channels for solid plaster partitions, a distance apart depending upon the span the lath will take.

Attach lath to each side of the Stud.

Plastoform—Will eliminate guesswork, and the element of chance of plaster bonding and staying bonded to concrete. Plastoform is easier to install than wood sheathing which it replaces. The continuous dovetail keys are positively bonded

to the concrete on the one side, and ready to receive plaster on the opposite side. To form slabs, beams, columns, walls, etc., the simplest type of temporary wood centering is required. The resultant cost is less than using wood forms without any after treatment. Chemicals, plastics and mastics are not positive bonding mediums, but Plastoform is. It is also used for lining wood forms. Furnished in 1, 1½ and 2-in. Above illustrates 1½-in. All concrete work in the Officers Apartment Buildings at Quantico, Va., out of the War Department, and innumerable other projects are treated for plaster bond with Plastoform.

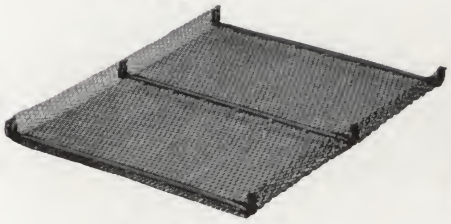
THE SHUREBOND UNIT SYSTEM OF CONCRETE JOIST CONSTRUCTION

This construction is used with reinforced concrete or structural steel frame, or with bearing walls. It incorporates the metal forms which act as moulds for forming concrete joists and top slabs, and the metal lath for the ceilings under the slabs (see illustrations below). Tile units can be furnished any width or depth, with end units and lath bottom units to match. Any degree of tapered or beveled end tile can be supplied. Tile units have great strength and rigidity as they are made from special analysis heat treated steel. This system offers the following advantages, resulting in good workmanship and economy:—Less dead load; simple wood forming; quick installation; positive integral bonding of lath bottoms; maximum concrete displacement; simple conduit installation; hard dense concrete; conformity with any structural design; permanency.

Used in such buildings as the Merchandise and Furniture Marts, Chicago; Carew Tower Project, Cincinnati; Esperson Bldg., Houston; Gimbel Bros. Dept. Store, Philadelphia; Barnett National Bank Bldg., Jacksonville; Dexter Horton Bank Bldg., Seattle, Baltimore and Boston Federal Buildings, and many other references just as representative.

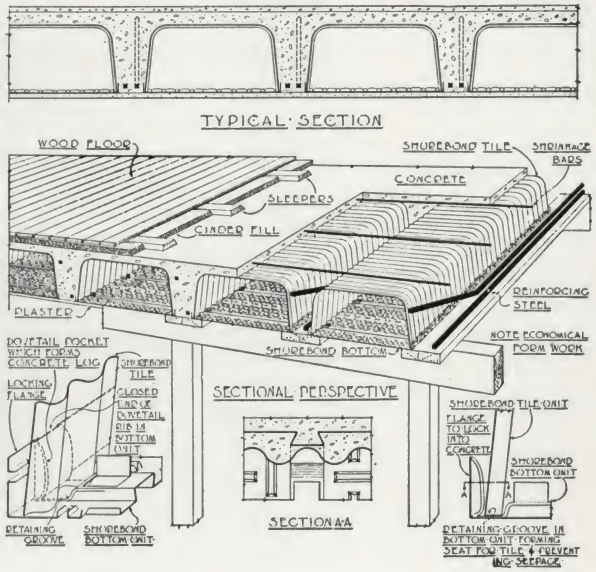
Shurebond Tile Unit

Shurebond End Unit



Ankorlath Bottom Unit

Shurebond Bottom Unit



METRODECK

(Metal Roof Deck) made with ribs 1½ or 1¾ in. deep, spaced 6" o.c. of 18, 20, 22 and 24 gauge, regular or copper bearing steel, painted black or gray, and of the same gauges in galvanized. Ribs taper in the length of the deck, telescoping with ribs of adjacent plates when lapped endwise. Unnecessary to force ribs together to make them mesh. It is easily and quickly adjusted to center on purlins, lays flat and buckling of metal between ribs is eliminated. Erection costs greatly reduced. A smooth uniform surface results, to which cork or board insulation is stuck with hot mopped asphalt. Roofing is then applied to insulation. Deck is erected with intermediate and purlin clips, or welded. Light dead load to carry given live load, cuts weights of structural members. Write for safe load tables or send plans for suggestions.

Rough Metal Bucks—for attaching wood trim around door openings for solid plaster, clay or gypsum tile, or hollow metal lath and plaster partitions. Further information on request.

9/6

ARCHITECTS HANDBOOK ON KNAPP

Knapp SANITARY METAL TRIM TRADE MARK

METAL TRIM

KNAPP BROS · MANUFACTURING CO ·

KNAPP

KNAPP BROS. MANUFACTURING COMPANY

JOLIET · ILLINOIS

EXPERIENCE

Originated by a practicing architect, the Knapp Line of Sanitary Metal Trim and Plastering Accessories has, with the co-operation of the architectural profession, attained distinct leadership. Knapp experience covers a period of about thirty-five years.

FACILITIES

A modern plant of extensive proportions planned for maximum efficiency is devoted exclusively to the manufacture of pressed metal building specialties. Complete equipment allows fabrication of the unusual item in a variety of materials and finishes.

REPRESENTATIVE PRODUCTS

METAL BASE
WINDOW TRIM AND STOOLS
WYR-WAY BASE
PLASTERED-IN CASINGS
APPLIED CASINGS
FLOOR COVES
PLASTERED-IN PICTURE MOULDING
APPLIED PICTURE MOULDING
HEAVY DUTY PICTURE MOULDING
CHAIR RAILS
DADO MOULDS
MAP AND DISPLAY RAIL
STOP MOULDINGS
MULLION AND TRANSOM BAR COVERS
BLACKBOARD TRIM
CHALK TROUGH
CHALK TROUGH INSERTS
ACCESS PANELS
BASE SCREEDS
BASE GROUNDS
SMALL NOSE CORNER BEADS
INNER ANGLE BEADS AND COVES
BULL NOSE CORNER BEADS
REINFORCED BULL NOSE CORNER BEADS
CORNER GUARDS
LINOLEUM GROUNDS
WIRE CARRYING RACEWAYS

SERVICE

Special attention is given to the requests of architects, engineers, or builders in any problem arising from the adaptation of standardized designs to practical conditions. Advice or consultation is offered in developing a product for the unusual condition.

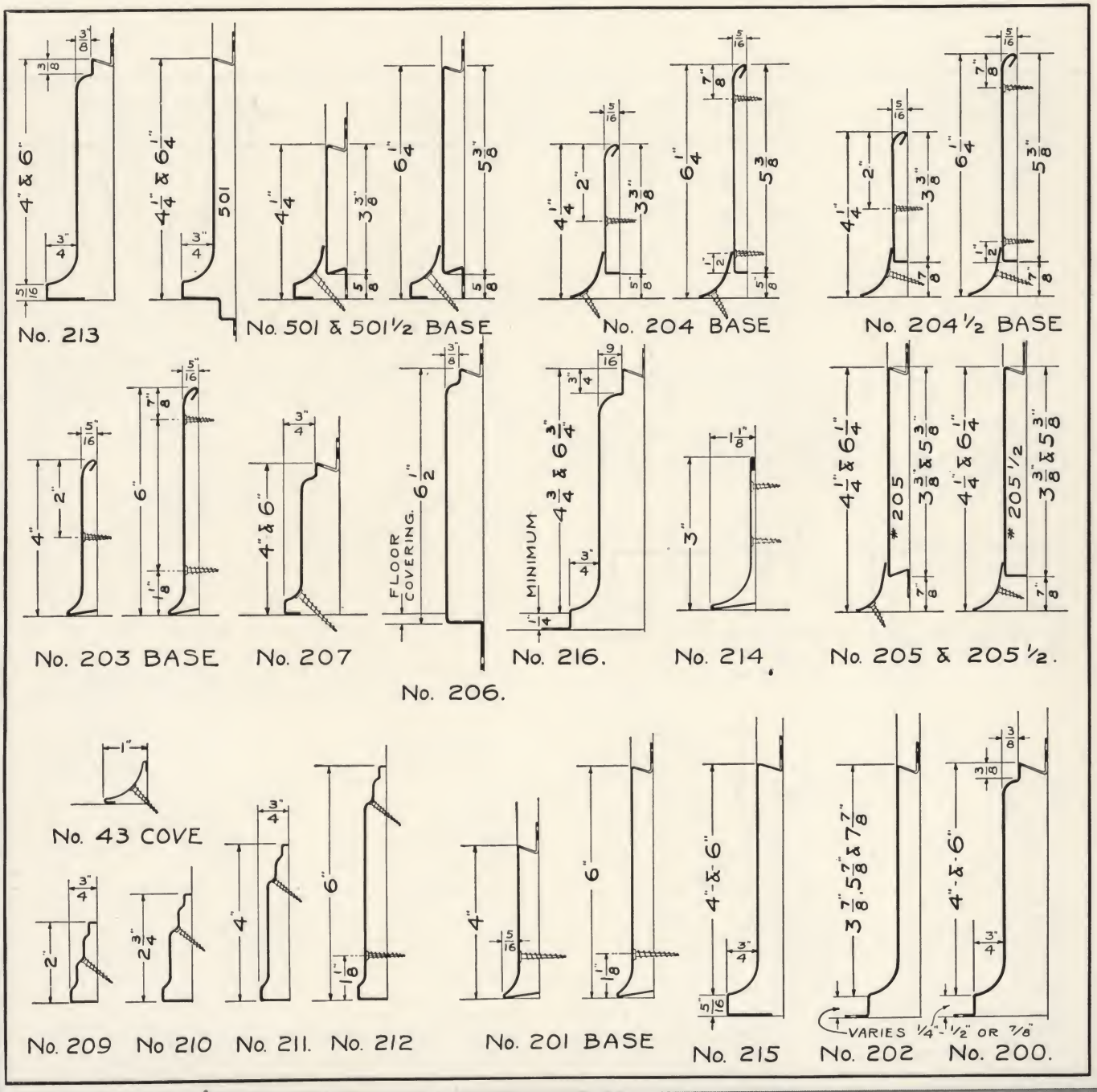
METAL BASE

STANDARD TYPES—There are several types of Knapp Metal Base. The details shown illustrate the general principles of both the plastered-in self-grounding and the applied-after-plaster types. Single or two member sections meet a variety of needs.

FITTINGS—Corner fittings and end stops are available for all base sections requiring their use. These fittings, of finest quality cast iron, are designed to be used in connection with square or cove internal as well as square or radius external corners.

GAUGE AND SIZE—All sections of either four inch or six inch nominal height are available fabricated from 20 or 18 ga. extra tight coat galvanized steel sheets. Coves of two member sections are furnished in 18 ga.

SPECIAL NOTE—In the cases of Nos. 200 and 202 and 216 bases only, it is necessary to specify the floor flange depth as ¼ in., ½ in., or ⅞ in., as may be needed to suit various floor finishes. Grouting of all plastered-in types assures maximum fire-safeness and serviceability.



FULL SIZE DETAILS FURNISHED ON REQUEST

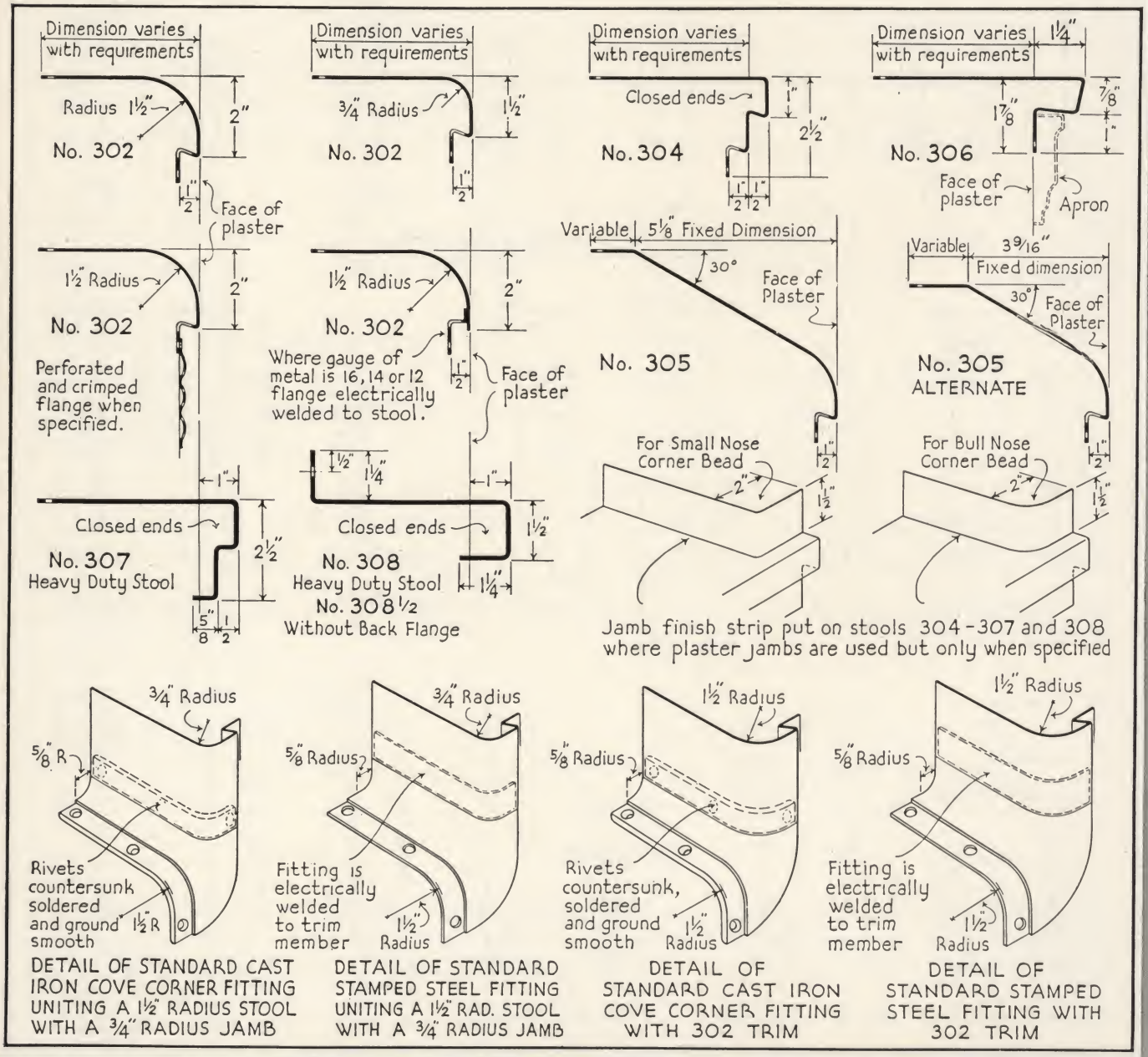
9/6 METAL WINDOW TRIM AND STOOLS

FUNCTION AND MERIT—Modern construction requires fire safeness and permanence, obtainable only through the use of substantial steel trim members. Plastered-in designs couple such functions with attractive appearance and economy of maintenance.

RECOMMENDATIONS—Unit type frames, shop assembled, are recommended for superiority of workmanship and finish. Knock-down frames are advisable when size prevents shipment of shop-made units. Shop assembly facilitates erection.

KIND AND GAUGE OF METAL—Extra tight coat galvanized steel sheets should be specified. Jambs and head of narrow reveal may be 20 ga.; wider reveals 18 ga. Stools of narrow reveal may be 18 ga.; wider reveals 16, 14, or 12 ga.

COMBINATIONS—Complete frames may consist of various sections or combinations. Typical assemblies consist of radius jambs and heads, together with flat or splayed stools. Corner construction may consist of fittings or welded miters.



DETAIL OF STANDARD CAST IRON COVE CORNER FITTING UNITING A 1½" RADIUS STOOL WITH A ¾" RADIUS JAMB

DETAIL OF STANDARD STAMPED STEEL FITTING UNITING A 1½" RAD. STOOL WITH A ¾" RADIUS JAMB

DETAIL OF STANDARD CAST IRON COVE CORNER FITTING WITH 302 TRIM

DETAIL OF STANDARD STAMPED STEEL FITTING WITH 302 TRIM

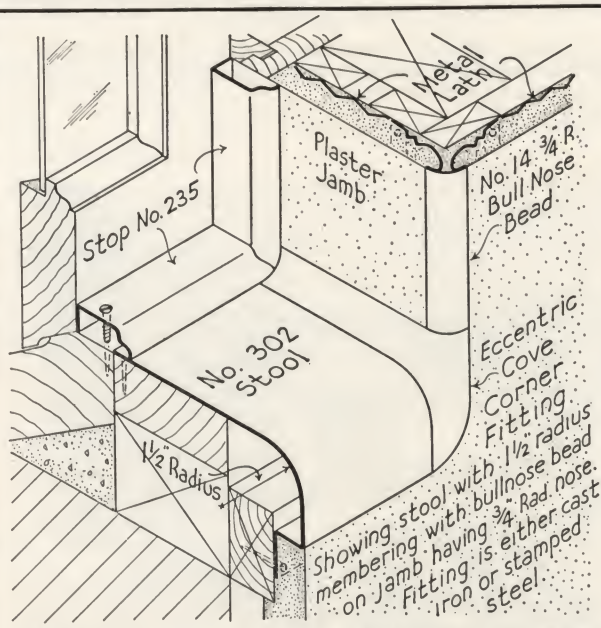
FULL SIZE DETAILS FURNISHED ON REQUEST

Knapp Bros. Mfg. Co.

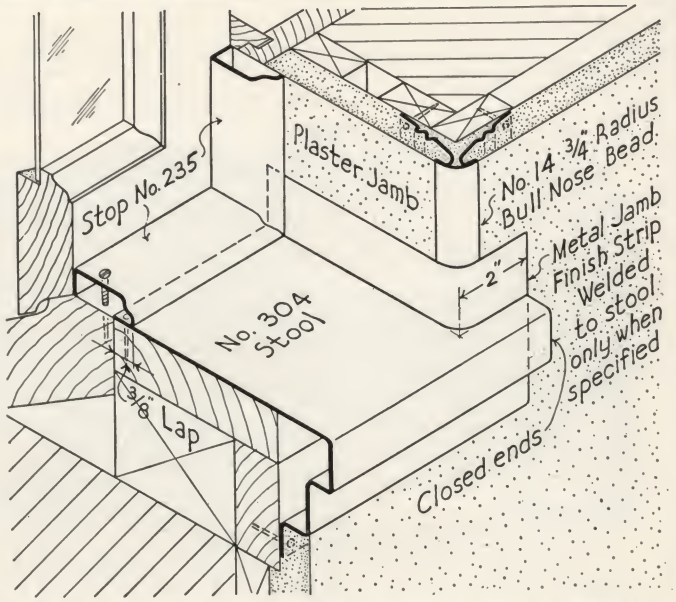
DETAILS OF WINDOW TRIM AND STOOLS

No. 302 trim may be used for the stool alone, in which case Knapp Sanitary end fittings are attached in the factory. These fittings member with Knapp bull nose corner beads, thus permitting the use of plaster jamb and head reveals. It is available in either ¾ in. or 1½ in. radius nose.

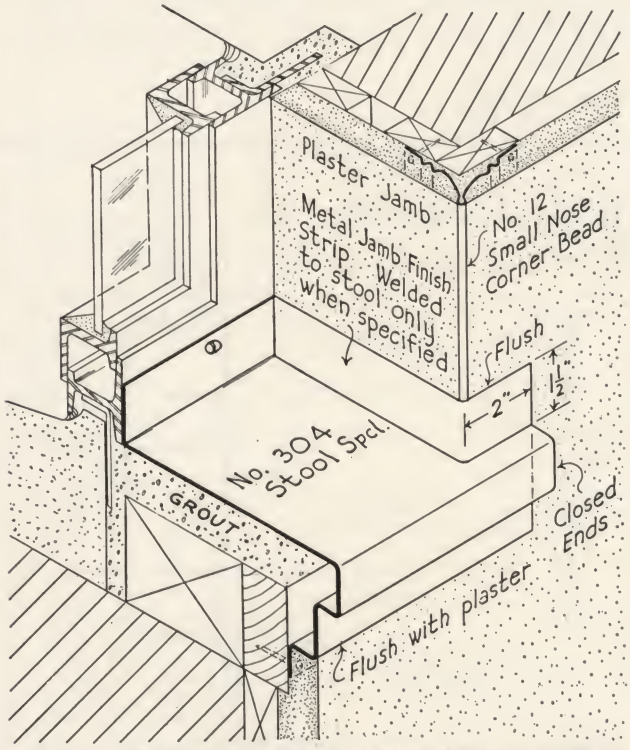
The jamb finish strip shown in the detail is furnished **only when specified.** When specified it will be made to match the Knapp small nose or bull nose bead specified. The **Jamb finish strip** provides a straight true line for the plaster jambs and effectively protects the joint between the metal stool and plaster jambs from damage and disintegration.



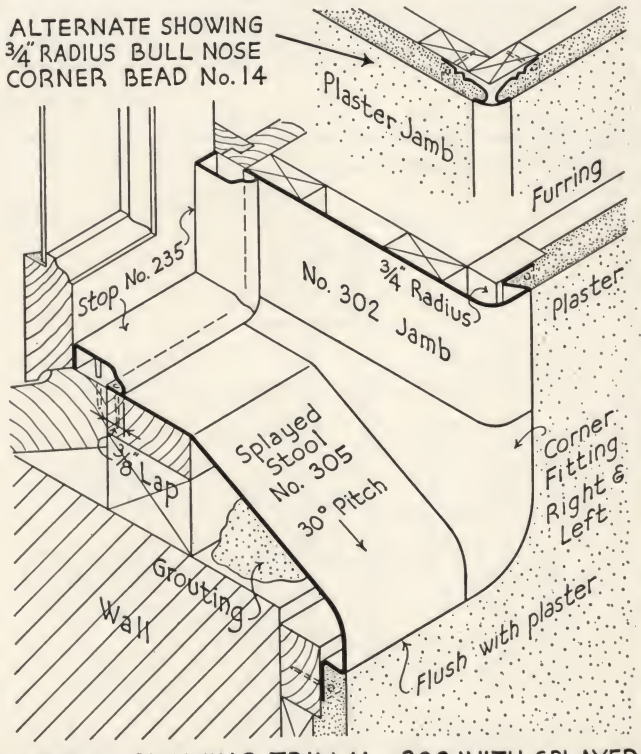
DETAIL SHOWING SANITARY STOOL No. 302 WITH COVE CORNER AND PLASTER JAMB



DETAIL SHOWING METAL JAMB FINISH STRIP WITH No. 304 STOOL AND No. 14 CORNER BEAD



DETAIL SHOWING METAL JAMB FINISH STRIP WITH No. 304 STOOL AND No. 12 CORNER BEAD



DETAIL SHOWING TRIM No. 302 WITH SPLAYED STOOL No. 305

FULL SIZE DETAILS FURNISHED ON REQUEST

9/6 WYR-WAY BASE BRANCH CIRCUIT SYSTEM

GENERAL DESCRIPTION and EXPLANATION

Wyr-Way Base consists of two wire-carrying raceways with an easily removable cover plate concealing them. The upper raceway is designed to carry low tension wires, such as telephone, signal circuits, telegraph wires, etc. The lower raceway is designed to carry high tension wires for all lighting or power appliance requirements. The wires are laid in the raceways directly and do not have to be installed in conduits. The cover is easily removable when needed and is in no sense a loose cover.

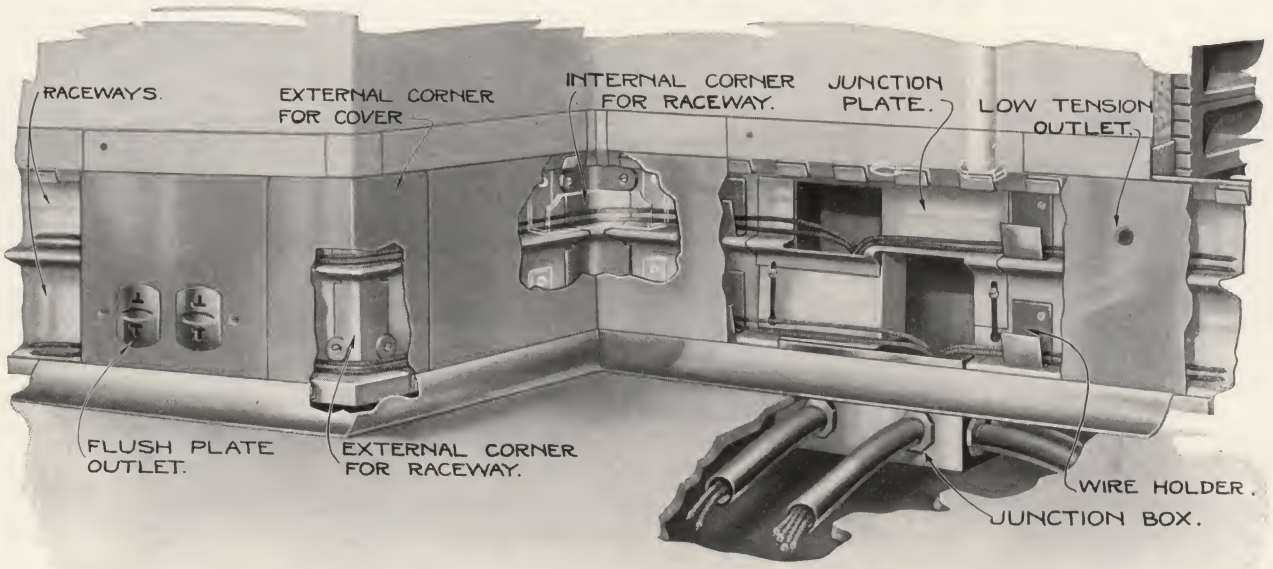
Junction boxes of types depending on local requirements are provided so that the circuits may be conveniently brought to the raceways. Cast iron corner fittings for the raceways are provided to eliminate the necessity for mitering at corners. Flush plates prepared for convenience outlets are provided so that they may be inserted at any point in the base for present or future outlets. The low tension outlets may be obtained by drilling a hole anywhere in the cover plate in front of the upper raceway.

A floor member is provided so as to complete the artistic effect of the base and give a sanitary finish at the floor line.

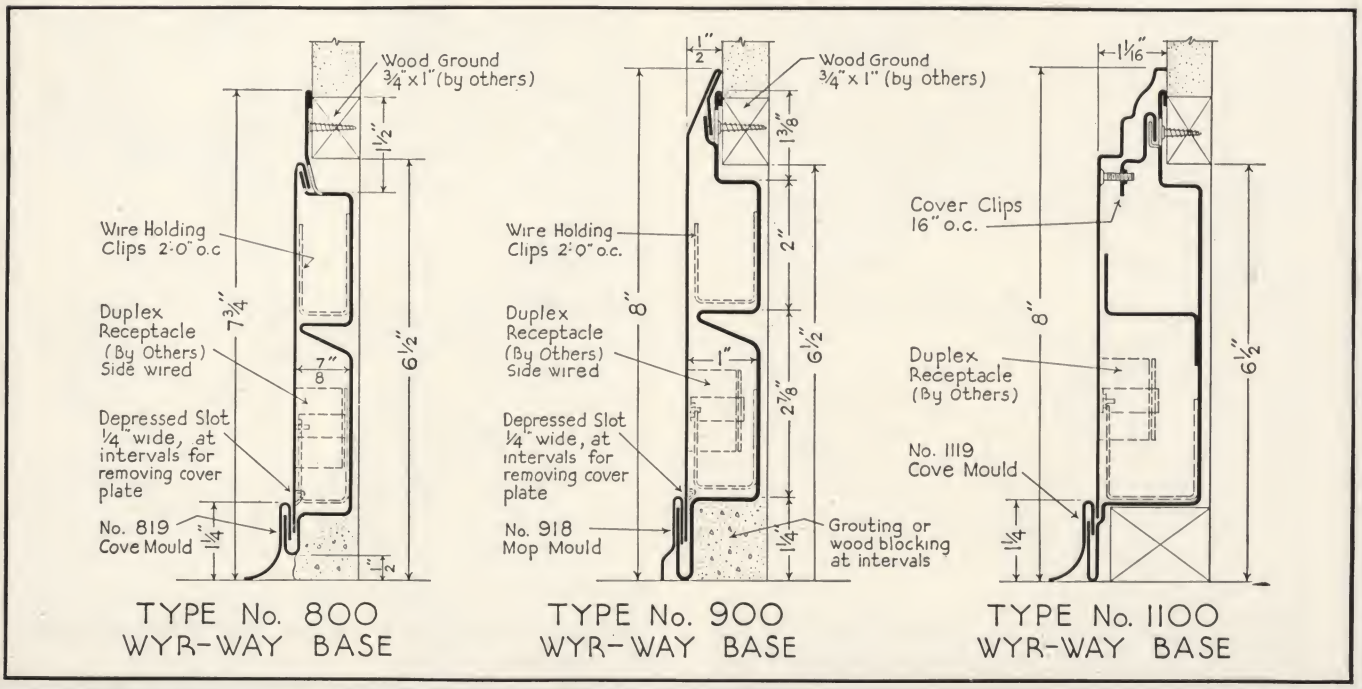
Wyr-Way is made with single, double and triple raceways to meet any and all wiring requirements.

Individual catalogs, describing No. 800, No. 900 and No. 1100 Wyr-Way Base with complete details of junction boxes and corner fittings, will be sent on request.

(All Wyr-Way Inspected and Labeled by Underwriters' Laboratories, Inc.)

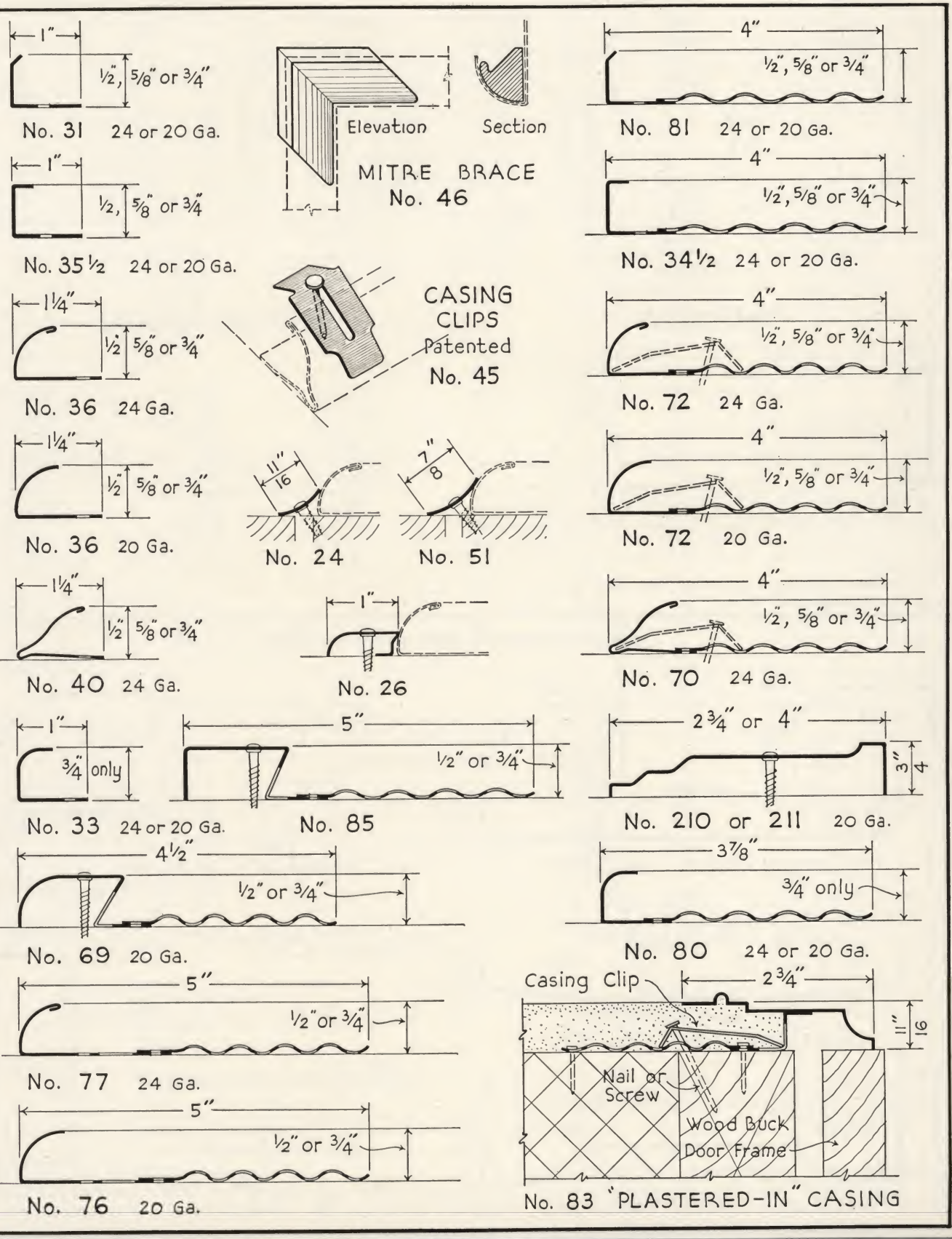


Wyr-Way Base Type No. 800



FULL SIZE DETAILS FURNISHED ON REQUEST

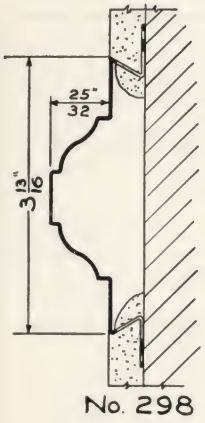
METAL DOOR AND WINDOW CASINGS 9/6



FULL SIZE DETAILS FURNISHED ON REQUEST

9/6 MISCELLANEOUS METAL TRIM

CHAIR RAILS



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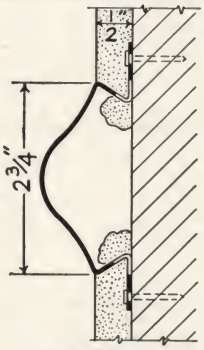

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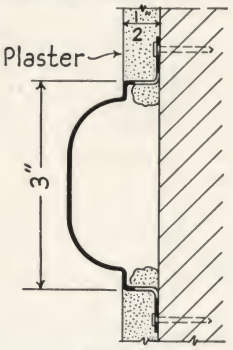

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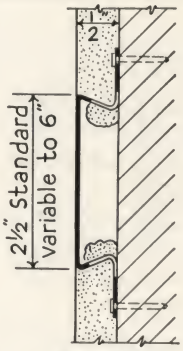
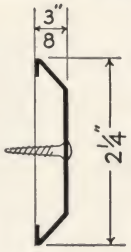


No. 299

DADO MOULDS



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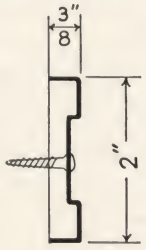

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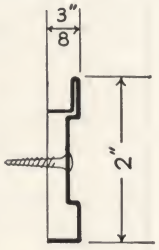
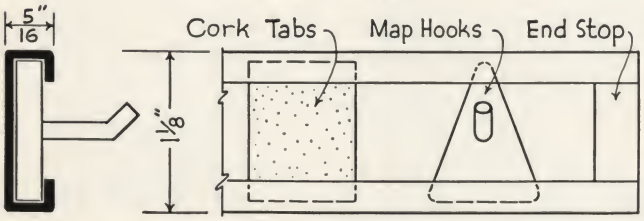


No. 25½

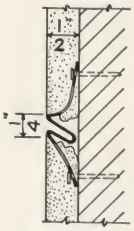
MAP RAILS



Knapp No. 19 is furnished with the following standard equipment; one hook for each two lin. ft. rail; two linoleum tabs for each lin. ft. of rail; and 2 end stops for each stock length of rail. Stock lengths, 6 ft., 8 ft. and 10 ft. Hooks are adjustable and removable.

This rail will fit Knapp blackboard trim and may also be used with wood or other trim items.

PICTURE MOULDS



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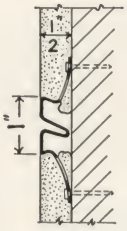
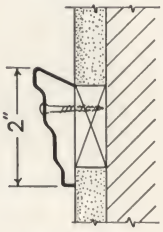
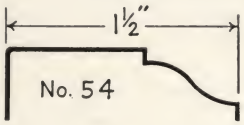


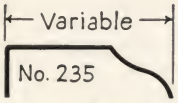
No. 20

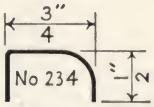


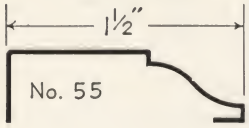
No. 208

MULLION COVERS AND STOP MOULDS

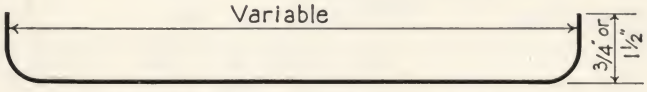






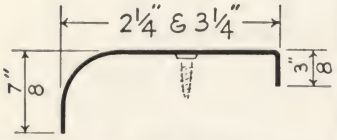


STOP MOULDINGS

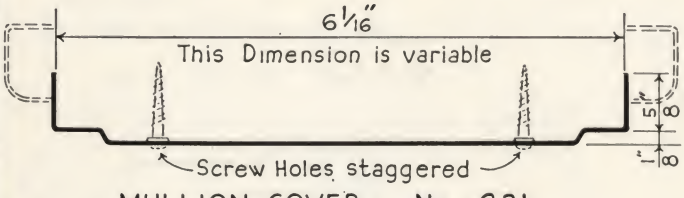


MULLION COVER No. 240

JAMB & HEAD LINER No. 232



Nos. 34 & 35 CASINGS



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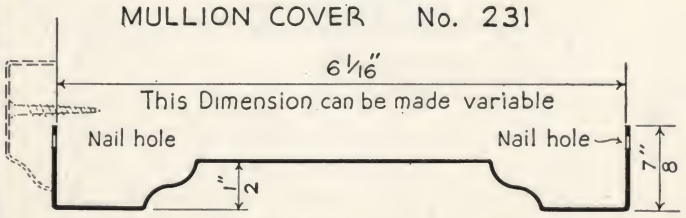

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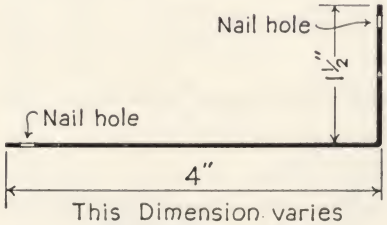
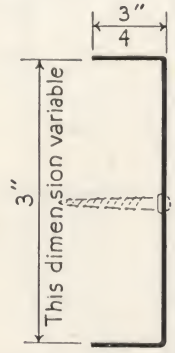


This Dimension varies with requirements

JAMB AND HEAD LINER No. 233



TR. BAR COVER No. 236

FULL SIZE DETAILS FURNISHED ON REQUEST

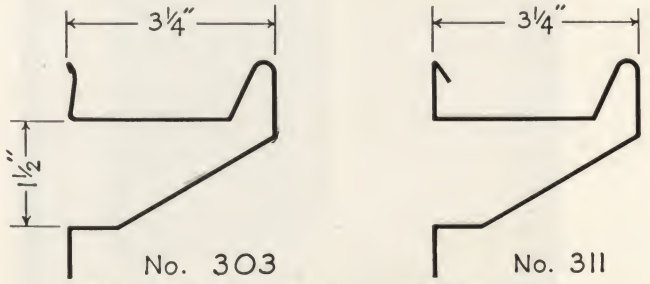
BLACKBOARD TRIM AND CHALK TROUGHS 9/6

Applied Type

The "applied" types of chalk troughs and trim are erected after the plastering is completed. They are attached to wood grounds with oval head countersunk screws. The typical Detail of Construction illustrates a standard installation of this type of finish.

Chalk Troughs

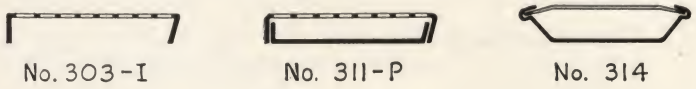
Knapp standard troughs are made from 22 gauge tight coat galvanized steel; they are No. 303 and No. 311. The number 311 has the top flange turned out to provide a dust deflector; No. 303 is a little lower priced. Stock lengths are 6' 0", 8' 0" and 10' 0". End stops are available.



STANDARD CHALK TROUGHS

Inserts and Dust Pans

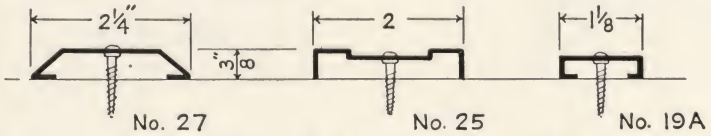
Chalk troughs may be used without either insert or dust pans. We have available our No. 303-I perforated metal insert which will fit either the No. 303 or the No. 311 trough; our No. 311-P dust pan, which has a flat perforated cover or our No. 314 dust pan, which has a slotted removable cover. Stock lengths of inserts and pans are 3' 0", 4' 0" and 5'0".



Blackboard Trim

Nos. 25 and 27 are available in 10' 0" stock length. These sections may be used with our standard chalk trough. We have a complete line of cast iron flush corner fittings consisting of 90° corners, tees and crosses. Knapp map rail may be used with either of these sections.

No. 19-A provides a simple effective finish where heavier trim members are not desired. This number must be mitered at the job as no fittings are available. It is desirable to specify a metal ground for this item as its narrow face will not permit the use of an effective wood ground. This trim harmonizes nicely with Knapp map rail.

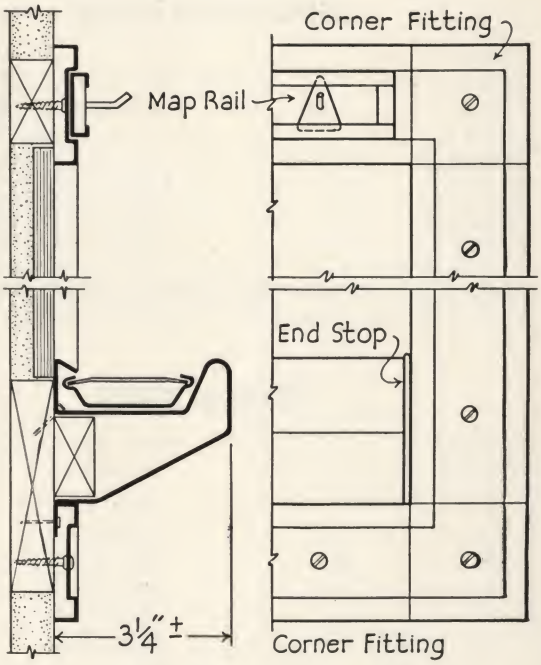


STANDARD BLACKBOARD TRIM

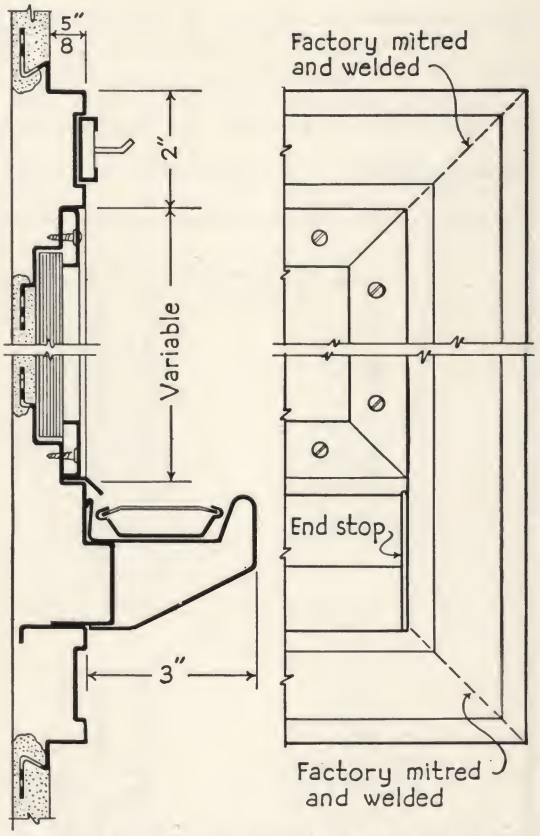
"Plastered-In" Type

The Knapp No. 313 "plastered-in" and self-grounding unit is erected before the plastering is started. It is factory assembled to predetermined sizes. Corners are mitered and welded and ground smooth. The chalk trough and stop mouldings are cut to length or mitered, punched and countersunk and shipped separate to be applied after the plastering and blackboard installations have been completed.

This design assures a straight true installation; it provides screed lines for the plasterers' work and a positive seat and support for the slate blackboard.



TYPICAL CONSTRUCTION DETAIL
"APPLIED" BLACKBOARD TRIM



TYPICAL CONSTRUCTION DETAIL
"PLASTERED-IN" No. 313
BLACKBOARD TRIM

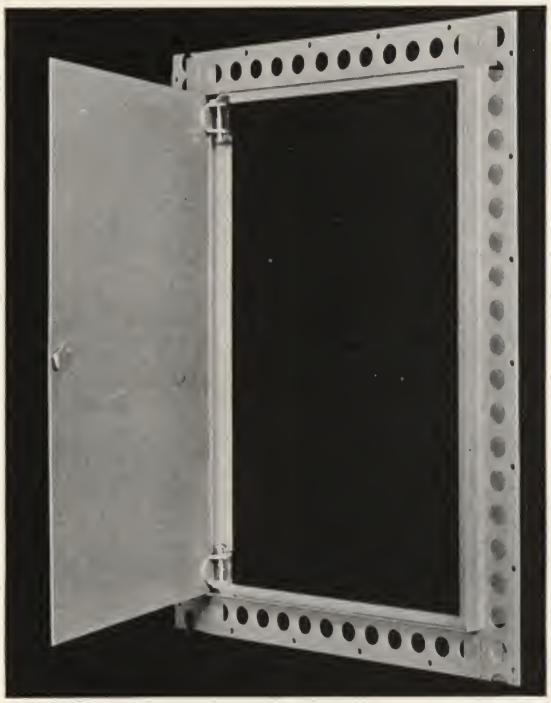
FULL SIZE DETAILS FURNISHED ON REQUEST

9/6 KNAPP FLUSH ACCESS DOORS

SPECIFICATIONS

Frame.....18 ga. Steel
Door.....14 ga. Steel
Flange.....Perforated for Plaster Key
Latch..... Brass, Cam Type
Operator..... Flush, Slotted Type
Anchors.....Adjustable, 4 per Frame
Hinges.....Brass Pin, Captive Type
Finish.....Special Gray Prime Coat

(If desired, a 3-in. wide Perforated and Crimped Plaster Reinforcing Strip can be spot welded to frame.)



STOCK SIZES

Catalog Number	Door Opening Size	Rough Opening Size
1	7½x11½	8x12
2	12½x16½	13x17
3	14½x18½	15x19
4	14½x24½	15x25
5	18½x24½	19x25
6	18½x30½	19x31

Special sizes furnished on order.

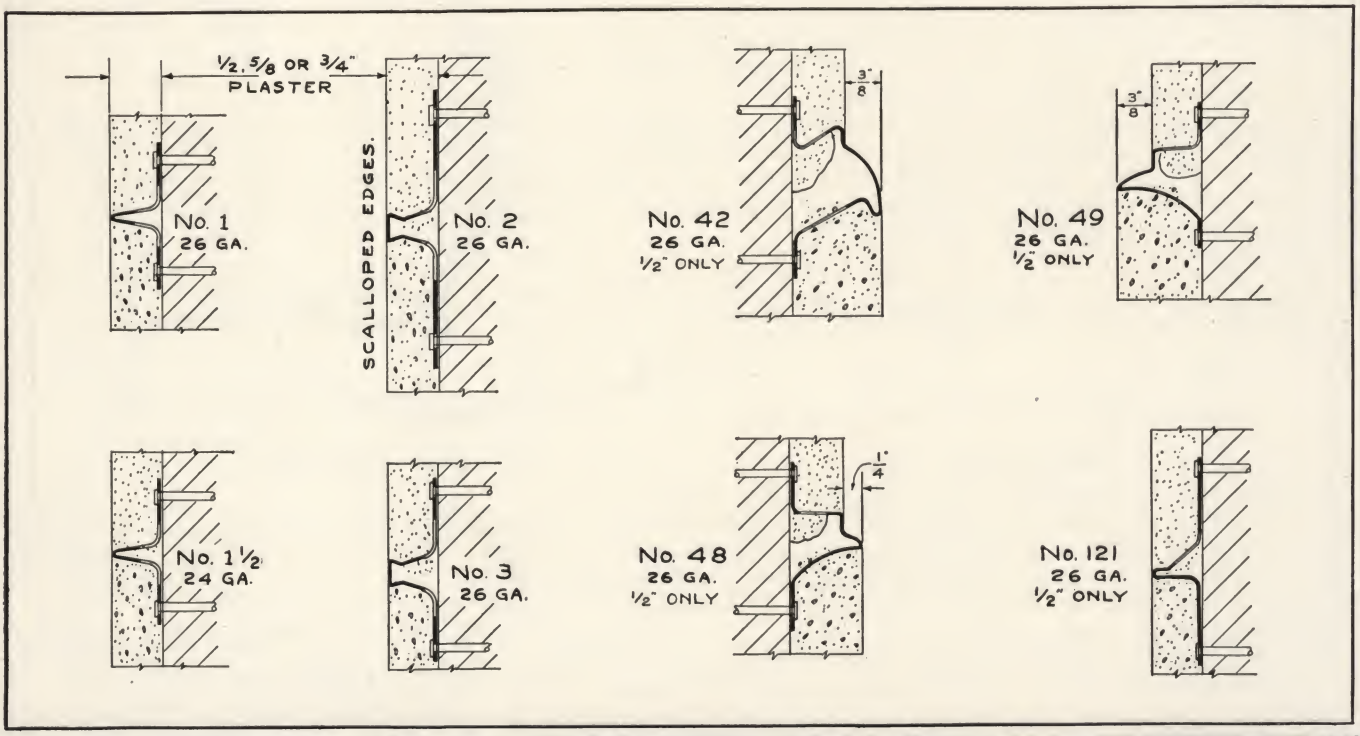
GROUNDS AND SCREEDS

Base Screeds—No. 49 has about ⅜ in. exposed metal; No. 42 has about ⅞ in. exposed metal. Both screeds have ⅜ in. projection from face of plaster.

Complete line of cast iron corners and end stops are available for both No. 42 and No. 49.

Base Grounds—All base grounds are available in ½ in., ⅝ in. and ¾ in. depth. No. 1 is standard base ground and separator; No. 2 is wide nose, scalloped wing; and No. 3 is wide nose, but without the scallops.

Corner Grounds—Nos. 4½—17—44 shown on opposite page provide a choice of square or radial grounds for internal corners.



FULL SIZE DETAILS FURNISHED ON REQUEST

CORNER BEADS

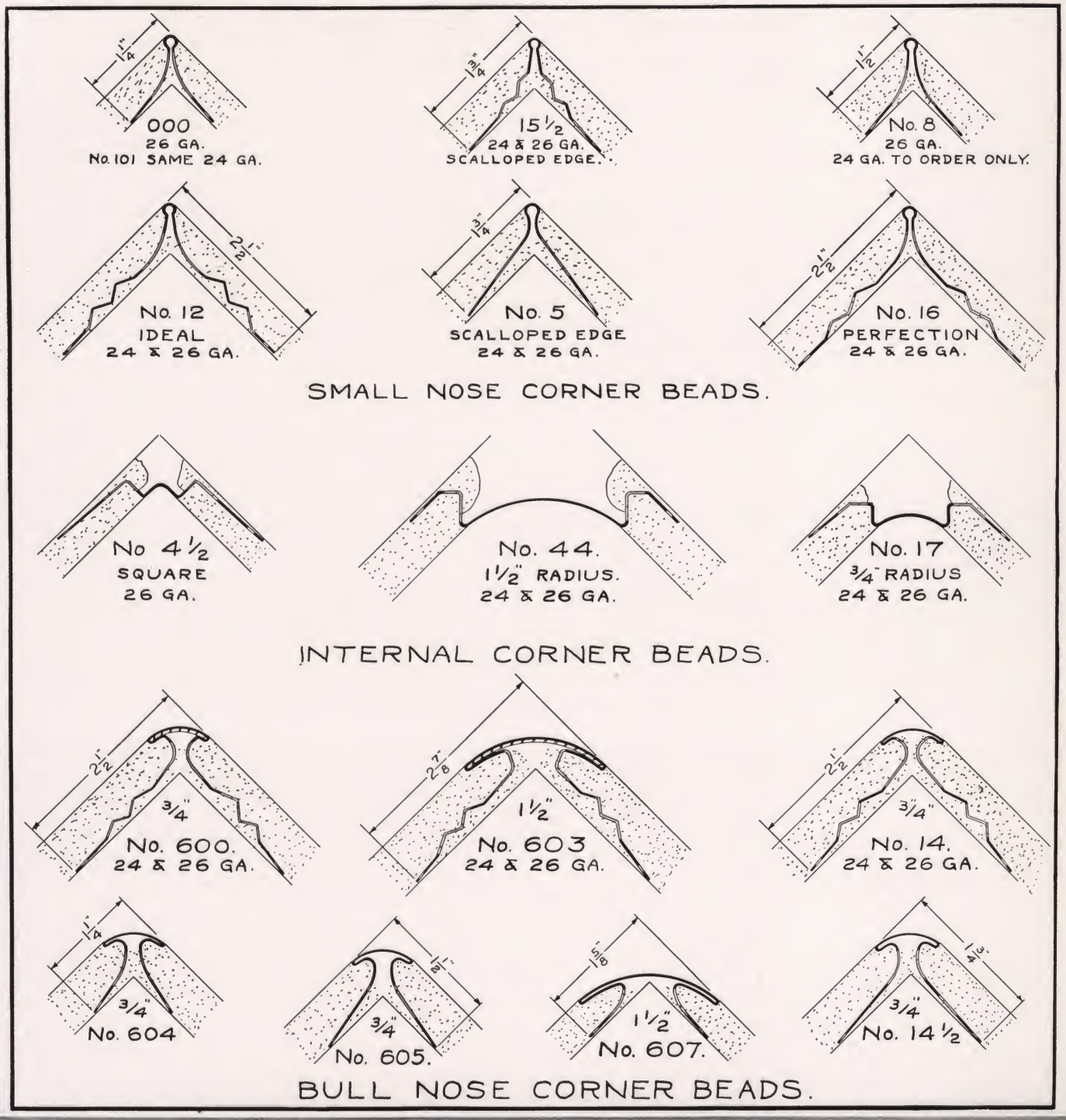
All beads manufactured in 24 and 26 gauge formed from tight coat galvanized steel sheets. Beads can also be made in brass, zinc and copper. All bull nose beads are available with reinforced nose.

Bull nose beads having 1 in. radius to match tile wainscot nosing are also available in a variety of designs.

FLANGE WIDTHS

Small Nose .....000 —1¼"
Small Nose ..... 8 —1½"
Small Nose ...5 and 15½—1¾"
Small Nose ..... 12 —2½"
Small Nose ..... 16 —2½"
¾" rad. Bull Nose...604 —1¼"
¾" rad. Bull Nose...605 —1½"
¾" rad. Bull Nose...14½—1¾"
¾" rad. Bull Nose.... 14—2½"
1½" rad. Bull Nose....607—1⅝"
1½" rad. Bull Nose....603—2⅞"

All Small Nose and all Bull Nose corner beads are available in the following standard stock lengths: 6, 7, 8, 9, 10 and 12 ft.



FULL SIZE DETAILS FURNISHED ON REQUEST

9/6

ARCHITECTS HANDBOOK ON KNAPP

Knapp
SANITARY METAL TRIM
TRADE MARK

METAL TRIM

KNAPP BROS·MANUFACTURING CO·

SECTION 9

CONTINUED ⟶

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

J-M STEELTEX for PLASTER, STUCCO and BRICK or STONE VENEER. *(Other Steeltex products will be found in our catalog in the Concrete Reinforcement section of this edition.)*

For the following Johns-Manville products, see File Index: Acoustical Treatment; Transite Walls; Asbestos and Asphalt Shingles; Built-up Roofs; Insulated Roofs; Transite, Corrugated and Flat; Home Insulation; Insulating Board; Pipe Coverings and Insulations; Asphalt Tile Flooring; Asbestos Wainscoting and Flexboard; Flush Doors.

J-M STEELTEX

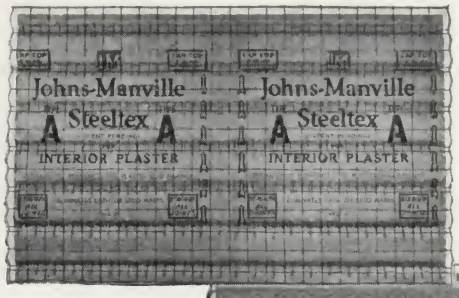
For Plaster—For Stucco—For Brick or Stone Veneer

To provide a better method of reinforcing plastic building materials, Johns-Manville offers Steeltex, in styles for interior or exterior application. The use of Steeltex does not involve a single change in building methods and is no more costly than the less satisfactory materials formerly employed. Many years of service have proved its structural value, fire-resisting qualities, durability, and economy and speed in erection.

J-M STEELTEX FOR PLASTER

Steeltex for Plaster, Type A combines two functions in a single material. The reinforcing element consists of a network of 16-gauge cold-drawn galvanized copper-bearing steel wires welded on 2-in. centers. This square mesh or fabric becomes automatically embedded in the plaster, giving effective reinforcement at all points, distributing strains equally in all directions and reducing plaster cracking hazards to the minimum.

Combined integrally with the welded wire reinforcing fabric is a fibrous absorbent backing, to which the mortar is instantly bonded and firmly adheres during the curing process. As the plaster sets, both the backing and wire fabric become an integral part of the plaster slab, resulting in a one-piece steel-reinforced construction exactly like reinforced concrete in principle.



Front of Steeltex, Type A Sheet

Back of Steeltex, Type A Sheet

Note rib stiffeners

Steeltex for Plaster, Type A is furnished in convenient size sheets (30½ x 49 in.), which are nailed to the studding and then plastered in the regular way. The sheets have a board-like rigidity, which eliminates deflection or sag and insures rapid, easy application and maximum plaster coverage. Since all of the mortar functions in the slab, no plaster is wasted in the formation of "keys." In addition to these advantages, the seven truss-like rib stiffeners which run the length of each Steeltex sheet provide a furring effect which eliminates stud and joist marks on the finished plaster job and makes possible a "floating wall" action which tends to minimize the destructive effects of stresses and strains caused by framing shrinkage.

Its ease of application and economy, combined with its structural advantages, adapt Steeltex to virtually all types of interior plaster work. It goes up rapidly on average work and is equally suited to cove or curved ceilings, corners, niches, arches and other unusual decorative wall shapes.

Steeltex for Plaster, Type A

Steeltex for Plaster, Type A gives effective reinforcement, distributing strains equally and reducing plaster cracking hazard to the minimum

Complete individual specifications for any application of Steeltex for Plaster, Type A may be had on request. For the convenience of the architect and others, short form specifications for usual uses are given here.

1. Lathing Specification for Ceilings and Sidewalls over Wood Framing

All interior walls, partitions and ceilings, where specified and designated plaster, shall be lathed with J-M Steeltex for Plaster, Type A (2 x 2-in. mesh, 16 gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel wire, self-furring fabric, to which a tough fibrous backing is secured by means of 18-gauge stitch wires on 2-in. centers, with stiffening ribs formed in the fabric on not more than 5-in. centers).

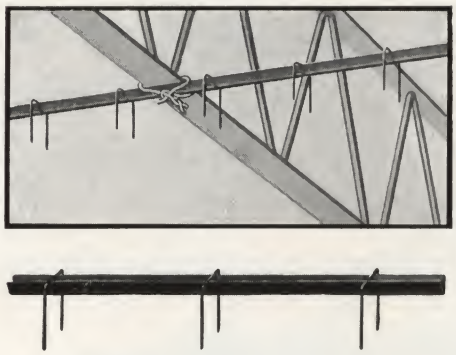
The Steeltex sheets shall be attached to ceilings and sidewalls with Steeltex Type A Lath Nails (11-gauge by 1⅝ in. long) driven to not less than 1-in. penetration into each joist or stud at every rib so as to engage the horizontal wire welded at the center of the rib.

All joints shall be staggered on both ceilings and sidewalls, so that four corners of adjacent sheets shall not occur at any one place. All laps shall be at least 1 in. and made so that wire laps against wire. Lathing of ceiling shall start at a corner, bending the first and all succeeding sheets of Steeltex at the ceiling angle to make a drop or apron down the sidewall measuring at least 4 in. Sidewalls shall be lathed from ceiling down so that all horizontal laps are made over the upper sheets. Steeltex shall be bent around all corners in such manner as to prevent joints at the juncture of walls. When wood framing abuts masonry at ceiling line or on sidewalls, the lath shall be butted into the corners and J-M Corner Reinforcing applied. All plaster shall be applied to full ¾-in. grounds.

Note: Other types of nails may be used, provided they penetrate the wood framing member a full 1 in. and securely engage the reinforcing wire—such as 4d common or box nails (bent over the wire), 1⅛-in. blued hook-head nails, 1¼-in. blued ⅞-in.-head plaster board nails and 1¼-in. blued metal lath staples.

Steeltex Is Easily Attached to Steel Framing

Over standard steel framing, joists, etc., Steeltex for Plaster, Type A is applied by means of the Steeltex Attachment Bar. (Where the spacing of the steel framing is greater than 36 in. on centers, the ¾-in. Steeltex Pronged Channel is used.) The Attachment Bar is either tied or clipped to the steel members and the



Steeltex Attachment Bar

For the open web type of joist, the attachment bar is saddle-tied with ordinary 14-gauge tie wires. This provides a rapid method of lath application over the steel framework. The U-shaped prongs are spot-welded to the bar every 5 inches

Steeltex sheets are then applied by pushing them against the galvanized wire prongs of the bars until these prongs puncture the Steeltex backing. The prongs are then bent over to engage the reinforcing mesh, completing a fast and economical method of attachment.

2. Lathing Specification for Ceilings under Steel Joists

J-M Steeltex for Plaster, Type A (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel wire, self-furring fabric to which a tough, fibrous backing is secured by means of 18-gauge stitch wires on 2-in. centers with stiffening ribs formed in the fabric on not more than 5-in. centers) shall be attached to steel joists with Steeltex V-shaped Attachment Bars or ¾-in. Steeltex Pronged Channels (19-gauge Attachment Bars where spacing of joists is less than 24 in.; 16-gauge Bars where spacing is 24 to 36 in.; ¾-in. Steeltex Pronged Channels where spacing is over 36 in.).

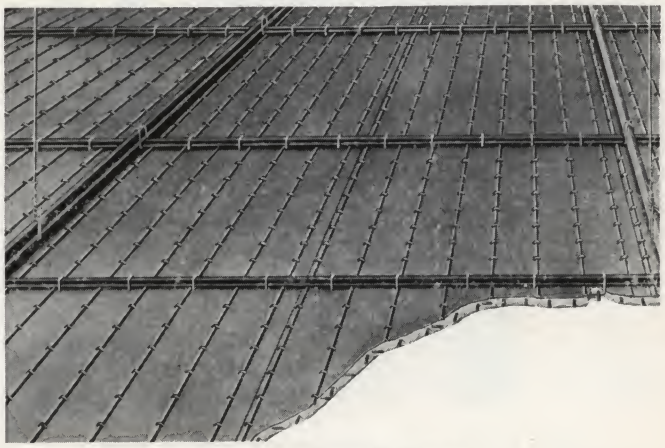
Attachment Bars or Channels shall be placed at right angles to the steel joists and attached to the flanges of rolled-section joists with clips which hook over the flange of the beam; and to the bottom chord of bar joists by tying with a double strand of 14-gauge galvanized annealed wire. In all cases, Attachment Bars or Channels shall be spaced not over 16 in.

Steeltex for Plaster, Type A shall be applied with ribs at right angles to the Attachment Bars or Channels, starting at the corner of the ceiling and bending the first and all succeeding sheets of Steeltex at the ceiling angle to provide a drop or apron down the sidewall measuring at least 4 in. The Steeltex shall be secured to the Attachment Bars or Channels by pushing the lath against the prongs so that they puncture the backing. When the lath rests against the Attachment Bar or Channel, the prongs shall be bent over the reinforcing wires of the lath and their ends pressed in firmly. When ceilings adjoin masonry walls, the lath shall be butted into the corners and J-M Corner Reinforcing applied.

Joints shall be staggered so that the four corners of adjacent sheets shall not occur at any one place. End laps shall be made over Attachment Bars or Channels only, and not between, and shall be 1 in. Consideration shall be given this requirement when attaching Bars or Channels, so that they will be so spaced as to permit the application of the Steeltex lath without cutting the sheets. Side laps shall be 1 in.

Steeltex for Suspended Ceilings

Complete suspended ceiling systems are also easily constructed with Steeltex, runner channels being first hung by heavy gauge wire the required distance from the floor slab. To these runner channels, ¾-in. Steeltex Pronged Channels, provided with prongs for attaching the Steeltex sheets, are then saddle-tied at right angles. In addition to its ease of erection and structural strength, this type of ceiling is light in weight and adaptable to any contour.



Steeltex Suspended Ceiling

Using 1½ in. runner channels and ¾ in. Steeltex Pronged Channels

3. Erecting and Lathing Specification for Suspended Ceilings

Plastered ceilings suspended from flat slab, arches, pan system, or other similar floor construction shall be constructed with J-M Steeltex for Plaster, Type A (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized copper-bearing steel wire, self-furring fabric to which a tough fibrous backing is secured by means of 18-gauge stitch wires on 2-in. centers, with stiffening ribs formed in the fabric on not more than 5-in. centers) applied to ¾-in. Steeltex Pronged Channels.

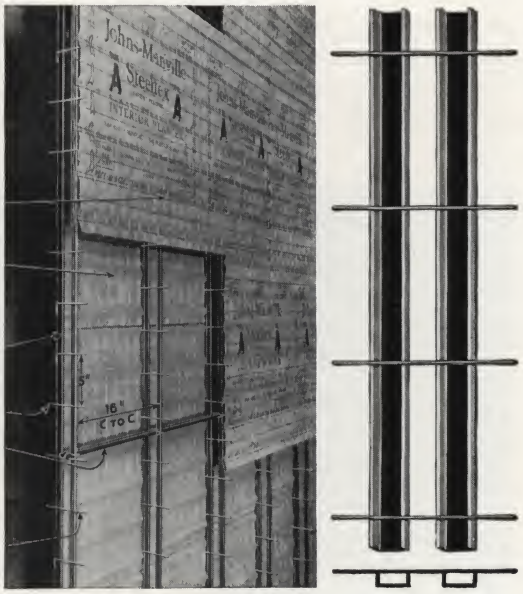
The ¾-in. Steeltex Channels shall be erected on 16-in. centers at right angles to 1½-in. runner channels weighing not less than 442 lbs. per 1000 lin. ft., and securely saddle-tied to them, at each crossing, with three or more strands of 16-gauge galvanized annealed wire. Runner channels shall be spaced on not more than 4-ft. centers and shall be suspended the required distance from the floor slab by means of 8-gauge, or heavier, galvanized wire hangers to which the runner channels are secured by three twists of the hanger wire; or by means of ⅜ x 1-in. flat steel hangers punched at proper position to permit runner channels to be bolted to them with not less than ⅜-in. diameter bolts; or by means of $\frac{7}{32}$-in. round, mild steel rods to which the runner channels are secured by two twists of the rod hanger. All hangers shall be of sufficient length to provide suitable anchorage of the upper ends to beams, or in the concrete or tile. Hangers may be attached to terra cotta floors by installation at tile joints during erection, or, when tile is already in place, by boring holes through the tile and securing the hanger on the upper side with a steel rod or toggle bolt. Hangers suspended from concrete beams or arches shall be placed before the concrete is poured. Hangers may be attached directly to steel beams, or purlins, only when these members are spaced not more than 4 ft. on centers.

Steeltex for Plaster, Type A shall be placed with ribs at right angles to the ¾-in. Steeltex Pronged Channels, starting at the corner of the ceiling, and secured to the Channels by pushing the lath against the prongs so that they puncture the backing. When the lath rests against the Channel, the prongs shall be bent over the reinforcing wires of the lath and their ends pressed in firmly.

Joints shall be staggered so that four corners of adjacent sheets shall not occur at any one place. End laps shall be made on Channels only, and not between, and shall be 1 in. Side laps shall be 1 in.

Steeltex Hollow Partitions

Hollow partitions are easily and economically erected with Steeltex, using the Steeltex Partition Stud illustrated below. Welded to the two channels of this stud at 5-in. intervals are galvanized wire prongs which puncture the Steeltex backing and are bent over to engage the reinforcing mesh and secure the sheets in place. Application of plaster to ⅞-in. grounds on both faces forms a 4-in. partition which is light in weight, yet rigid, and unusually effective from the standpoint of sound deadening and acoustics.



Detail showing construction of 4-in. Steeltex Partition

Using Steeltex for Plaster, Type A and the 2¼-in. Steeltex Partition Stud which is formed of two ¾-in. channels, to which are electrically welded galvanized annealed wire prongs. Wider studs, up to the maximum of 5½ in., can be supplied on special order

Corners of such partitions are easily formed by bending the ribs of the Steeltex to the proper angle.

4. Erecting and Lathing Specification for 4-in. Steeltex Hollow Partitions

4-in. Steeltex Hollow Partitions shall be constructed with 2¼-in. J-M Steeltex Studs (steel studs fabricated by joining together two lines of ¾-in. hot-rolled channels with 12½-in. gauge galvanized annealed wire welded across the legs of each channel at 5-in. intervals, the wire prongs being at least 4¾ in. long and extending not less than 1¼ in. beyond each edge of the stud, which has an over-all depth of 2¼-in.). Steeltex Studs shall be spaced on 16-in. centers for partition heights up to and including 9 ft.; on 12-in. centers for partition heights up to and including 12 ft.; and on 8-in. centers for partition heights exceeding 12 ft. Maximum stud height is 16 ft.

All partitions shall be permanently braced with ¾-in. channels, weighing not less than 332 lbs. per 1000 lin. ft., placed horizontally within the partition and securely wire-tied to each stud at all points of intersection with the studs. When the partition is 9 ft. or less in height, two lines of horizontal bracing channel shall be used, at distances of 3 and 5 ft. from the floor line. When the partition is from 9 ft. to and including 12 ft. in height, three lines of horizontal bracing channel shall be used, at distances of 3, 5 and 7 ft. from the floor line. When the partition exceeds 12 ft. in height, the horizontal bracing channels shall be located at distances of 3, 5, 7 and 10 ft. from the floor line, with additional braces at 3-ft. intervals to within 3 ft. of the ceiling line.

The 2¼-in. J-M Steeltex Studs shall be secured to floor and ceiling bearings by runner channels, nailing, ceiling and floor brackets, or holes cut in concrete floor and in ceiling.

When the partition studs have been erected plumb and true, Johns-Manville Steeltex for Plaster, Type A (2 x 2-in. mesh, 16-gauge, cold-drawn, electrically-welded, galvanized, copper-bearing steel wire, self-furring fabric, to which a tough, fibrous backing is secured by means of 18-gauge stitch wires on 2-in. centers, with stiffening ribs formed in the fabric on not more than 5-in. centers) shall be applied on both sides of the studs, starting at the ceiling and lathing down to the floor, so that all horizontal laps are made over the bottom edge of the upper sheets. Ribs of the lath shall be at right angles to the studs. The Steeltex sheets shall be attached to the studs by pushing the lath against the prongs so that they puncture the backing. When the lath rests against the studs, the prongs shall be bent over the reinforcing wires of the lath and their ends pressed in firmly.

Joints of the lath shall be staggered so that four corners of adjacent sheets shall not occur at any one place. End laps shall be made on studs only, and not between, and shall be 1 in. Side laps shall be 1 in. Lath shall be bent at right angles to brick or masonry walls, with the selvage edge of the sheets nailed into joints or the concrete.

J-M STEELTEX FOR STUCCO

More perhaps than any other plastic building material, portland cement stucco requires proper reinforcement. Without it, the low tensile strength of the stucco slab is inadequate to resist severe structural stresses, and cracking is almost certain to result.

Steeltex for Stucco derives its reinforcing effectiveness from a network of heavily galvanized copper-bearing steel wire fabric as in Steeltex for Plaster, except that the wire is 14 instead of 16-gauge and the waterproof membrane backing is composed of a double layer of tough fibrous paper, with the layers cemented to each other and further waterproofed by a layer of waterproof mastic compound between. The backing is fastened to the reinforcing wires by crimped stitch wires which let it fall away from the steel reinforcement ⅜ in., thus insuring the complete embedment of the steel wires in the stucco slab. The backing, in addition to providing a suitable base to receive and hold the wet mortar until it has set, furnishes a seal against moisture penetration and air-infiltration.

J-M Steeltex for Stucco is furnished in 50-sq. yd. rolls, 49 in. wide and 110½ ft. long, weighing 142 lbs.

Diagrammatic Steeltex for Stucco built-up wall section

(1) Monolithic stucco slab. (2) Reinforcing fabric. (3) Waterproof backing

per roll. Also supplied in sheets 49x52 in., shipped in bundles of 50 sq. yds. (26 sheets) weighing 160 lbs. For proper application, approximately 15 Steeltex Furring Nails are necessary per yard.

For new construction, Steeltex for Stucco is nailed either directly to the studs or over sheathing. It is also admirably suited to the modernization of old homes by nailing the Steeltex directly over the old clapboard or shingled sidewalls and then applying the stucco.

5. Lathing Specification for Stucco over Wood Framing

All exterior walls where specified and designated stucco shall be lathed with J-M Steeltex for Stucco (2 x 2-in. mesh, 14-gauge cold-drawn, electrically-welded, galvanized copper-bearing steel wire fabric, to which is secured a tough, double-layer fibrous backing with a mastic filler between the layers).

Steeltex for Stucco shall be applied direct to studs or over sheathing, or over old siding in the case of remodeling, and nailed to bearings. Steeltex for Stucco shall be nailed over every stud horizontally across the building, and every 6 in. vertically on the stud. Steeltex Furring Nails shall be placed under the horizontal wires at a corner of the mesh and toe-nailed to stretch the Steeltex taut automatically. Also nail around all door and window openings at 6-in. intervals.

The first width of Steeltex for Stucco shall be started at the sill line and extend around the building. The second width shall lap the first at least 1 in. (shingle fashion), lapping so that wire laps against wire. Where vertical joints occur, the same method of lapping shall be employed, but laps shall be 1 in.

Steeltex for Stucco shall be carried up to the openings or under the moulding of all doors and windows. In no case shall vertical joints be joined at corners, under or over window or door openings, or between studs, where applied direct to studs. In no case shall Steeltex for Stucco be butted, and in all cases the wire reinforcing must be continuous across all laps and embedded in the scratch coat of stucco.

Steeltex for Stucco in rolls is recommended applied direct to studs. For such construction, all horizontal laps midway between studs are secured with one tie of 18-gauge galvanized tie wire. Two ties are used between studs if studding is on 24-in. centers.

If Steeltex for Stucco in sheets is used, all laps shall be at least ¾ in. and the sheets placed so that the short dimension of the sheets extends across the studs.

In every case, the stucco placed over Steeltex for Stucco shall be applied in three coats to a total thickness of at least ⅞ in., in accordance with the specification of the Portland Cement Association.

For added protection at the corners of window and door openings remove the backing from an 8 x 12-in. strip of Steeltex and apply the wire mesh diagonally at all corners to provide double reinforcing.

J-M STEELTEX FOR BRICK OR STONE VENEER (38-16)

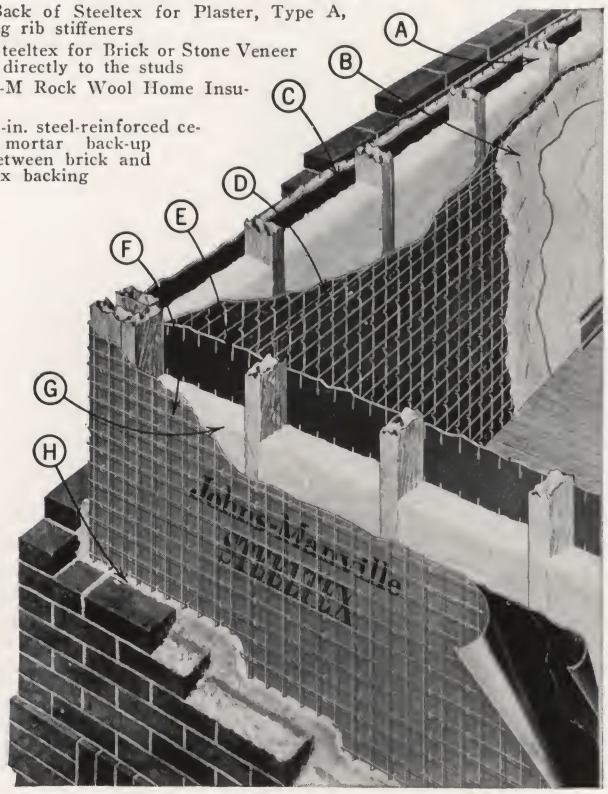
J-M Steeltex for Brick or Stone Veneer (38-16) is exactly like Steeltex for Stucco except that the galvanized steel reinforcing fabric is made of 16-gauge instead of 14-gauge copper-bearing steel wire.

It is furnished in rolls 49 in. wide and 110½ ft. long, containing 50 square yards and weighing 107 lbs.

Construction of a brick or stone veneer wall with Steeltex requires no radical change in building methods. The Steeltex is first nailed direct to the wood studding, shingle fashion, as in the case of stucco construction. The brick or stone is then laid up approximately 1 in. from the framework. In place of the customary method of tying to the framework, however, this 1-in. space is filled in with bricklayer's cement-mortar as each course is laid. The mortar flows around the Steeltex reinforcing wires, completely embedding them.

The result is a monolithic slab of brick or stone and steel-reinforced cement-mortar, bonded together to impart elements of strength and stability not found in ordinary veneer construction, and thoroughly sealed against moisture penetration by the heavy waterproof Steeltex backing.

A. Wood studding, protected against fire on all four sides by J-M Rock Wool Home Insulation and steel-reinforced cement mortar and plaster
B. Interior plaster applied over Steeltex for Plaster, Type A
C. Waterproof backing of Steeltex for Brick or Stone Veneer
D. Steeltex for Plaster, Type A, applied to studs
E. Back of Steeltex for Plaster, Type A, showing rib stiffeners
F. Steeltex for Brick or Stone Veneer nailed directly to the studs
G. J-M Rock Wool Home Insulation
H. 1-in. steel-reinforced cement mortar back-up slab between brick and Steeltex backing



A Structural Wall That Will Endure

At the left is shown an interesting example of how two Steeltex products—Steeltex for Brick or Stone Veneer and Steeltex for Plaster, Type A—supplemented by Johns-Manville Rock Wool Home Insulation between the studs, can be used to provide a wall of greater structural strength, comfort, fire-safety and water-tightness for modern home construction.

6. Specification for Sheathing over Wood Framing

All exterior walls for brick or stone veneering over wood framing shall be sheathed with Steeltex for Brick or Stone Veneer (38-16) (2x2-in. mesh, cold-drawn, electrically-welded, galvanized copper-bearing steel wire fabric, to which is secured a tough, double-layer, fibrous backing with a mastic filler between the layers).

The first width of Steeltex 38-16 sheathing shall be started at the sill line and extend around the building. The second width shall lap the first 1 in. (shingle fashion), lapping wire to wire with no fibrous backing in between. Where vertical joints occur, the same method of lapping shall be employed, and end laps shall be 1 in.

Steeltex 38-16 shall be nailed with galvanized nails (preferably 11-gauge 1½-in. nails, with a hook head) at every third wire, or on 6-in. centers, to each stud and shall be securely nailed over every other wire, or on 4-in. centers, around all openings.

MILCOR MANUAL

FIREPROOF BUILDING PRODUCTS

MILCOR STEEL COMPANY

MILCOR STEEL COMPANY

MILCOR

METAL LATH AND ACCESSORIES

THE COMPANY

The Milcor Steel Company is the foremost national manufacturer of "Firesafe" sheet metal products, largely consumed by the building industry. Constant improvement in design, materials, workmanship, and methods of production has marked the company's progress, until today Milcor Products are accepted nationally as standards of quality.

DIVERSIFIED LINE OF PRODUCTS

In addition to the line of Metal Lath, Plastering Accessories and Metal Trim, including Casings, Stools, Metal Bases, etc., described in this catalog, the Milcor Steel Company is among the largest manufacturers making a complete line of metal building products.

MANUFACTURING AND DISTRIBUTING FACILITIES

The Milcor Steel Company's plants consist of over a million (1,000,000) square feet of floor space and its properties cover forty (40) acres of land. In addition to its main comparatively new plants in Milwaukee, Wisconsin, and Canton, Ohio, equipped with modern machines, there are plants in Chicago, Illinois, Kansas City, Missouri, and La Crosse, Wisconsin. Sales offices are maintained in all principal centers. Warehouses are also maintained in Atlanta, Ga., Rochester, N. Y., and New York City.

CATALOGS AVAILABLE

(Size 8½x11 inches to fit filing cabinet.)

No. 20-G "The Milcor Manual"—a complete catalog on metal lath and allied products, including standard architectural specifications for "Firesafe" construction.

No. 29 "Roofing and Siding Manual."

No. 35-A "Milcor Furnace Pipe and Fittings."

No. 37-M "Milcor Metal Ceilings and Walls"—Illustrating and describing many of the attractive designs of Milcor Metal Ceiling and Walls.

No. 38-C "Milcor Steel Ceiling and Walls" contains many designs of "Perfect-fit" Ceilings and Walls manufactured by the Canton, Ohio, Plant.

No. 40-A General Line Catalog.

No. 100-B "Milcor Metal Trim."

MILCOR PRODUCTS—SPECIAL FEATURES

EXPANSION WING FEATURE

One of the outstanding features of Milcor Lathing Accessories, protected by patent, is the expanded metal lath wing which forms an integral part of the corner bead, picture mould, base screed, metal casing, and other products. The wings of various widths are formed of ⅜-inch diamond mesh expanded metal lath.

The advantages over the older types of plastering accessories are apparent:

(1) The network of the expanded metal wings assures keying of the plaster close up to the base of the exposed metal member.

(2) There is a definite economy in labor due to the simplicity of erection—these products can be wired, stapled, nailed or spotted, as best adapted to the particular type of wall construction, without the use of clips.

WIDE RANGE OF MATERIALS

Milcor Products as specified under each item are furnished not only in various weights of metal to adequately adapt them to a variety of spans and uses, but they are made as well in a wide range of selected metals and protective finishes.

Painting—All black metal lath is painted after cutting, expansion and heat treating, with Milcor Special Elastic Asphaltum Paint.

Galvanizing—All galvanized sheets are tight coated with new, pure zinc spelter before cutting and expansion.

Sheet Steel—Products so specified are cut from the highest grade of carefully inspected prime open-hearth sheet steel, either painted or galvanized as noted.

Copper Alloy Steel—The peculiar ability of copper alloy steel to resist corrosion is well known. Milcor "Copper Alloy" is of standard quality, carefully controlled for uniformity in production.

Products are furnished in Copper Alloy Steel either painted or galvanized as noted.

Inland Pure Iron, Armco Ingot Iron and Toncan Iron—Milcor Products are made in Inland Pure Iron, made from Quality Materials, Armco Ingot Iron, the purest iron made, and Toncan Iron, famous for its corrosion-resisting qualities. The superiorities of these metals have been proved beyond any doubt.

Products are furnished in Inland Pure Iron, Armco Ingot Iron and Toncan Iron either painted or galvanized as noted.

Anaconda Pure Copper—Under extreme conditions, where destructive acid fumes, salt air or other abnormal atmospheric attack is apt to exist, pure Anaconda copper is frequently used. This copper has great tensile strength and stiffness in addition to its value as positive resistance to corrosion.

Products so noted are available, cut from pure 16-oz. cold rolled Anaconda copper.

Pure Zinc—Products so noted are available, cut from pure zinc Nos. 11 and 12.

LABELS

Every bundle of Milcor Lath is conspicuously labeled with a distinctive metal tag vouching clearly for weight and particular metal used. Thus verification of specification requirements is easily insured.

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MILWAUKEE, WIS. CANTON, OHIO

CHICAGO, ILL. KANSAS CITY, MO. LA CROSSE, WIS. ATLANTA, GA. ROCHESTER, N. Y. NEW YORK, N. Y.

KUEHN'S SPECIALMESH

A FINE MESH LATH FOR WALLS AND CEILINGS

NOTE THESE FEATURES

THEY ARE IMPORTANT

(1) Scientifically Designed Mesh

Tests show this size mesh to give the most positive plaster grip.

(2) Positive Rigidity

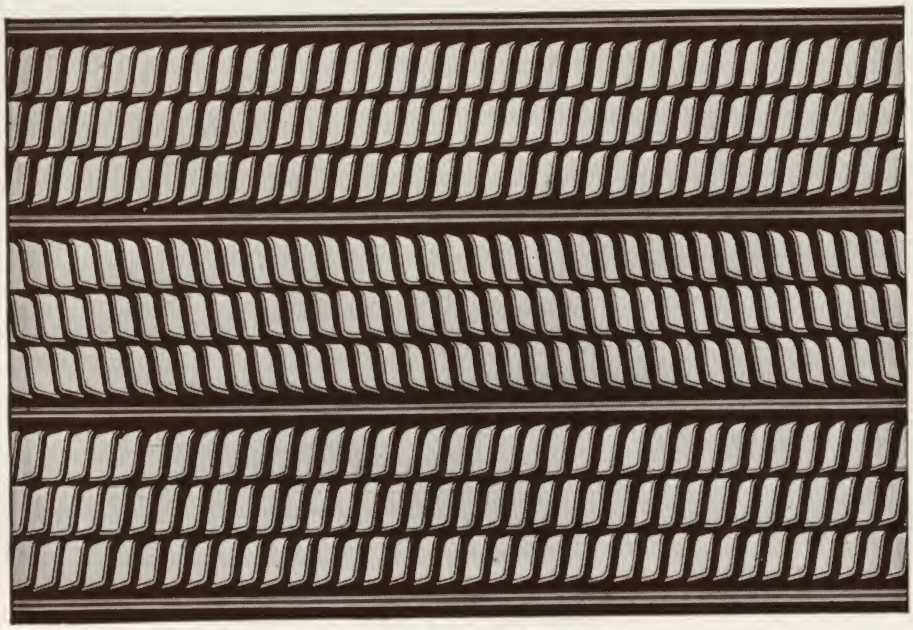
There are 16 ribs to a sheet of Kuehn's Specialmesh, which are corrugated to make them doubly rigid.

(3) No Plaster Waste

It is practically impossible to waste plaster (as ordinarily applied) by forcing an unnecessary amount through Kuehn's Specialmesh.

(4) Easy to Apply

It has no sharp edges to lacerate the lather's hands.



←WIDTH OF ENTIRE SHEET—24-3/8 INCHES→
24-Inch Covering (16 ribs) ←1-1/8 Inches→

←LENGTH OF ENTIRE SHEET OF LATH—96 INCHES→

DESCRIPTION

GENERAL CHARACTERISTICS

Kuehn's Specialmesh is a new rib lath specially adapted for interior walls and ceilings. The meshes are so formed that in plastering the slightest pressure of the trowel completely imbeds the lath, and due to the small mesh, waste of plaster is eliminated. The longitudinal stiffening ribs are 3/8 inch wide, spaced 1 5/8 inches on center and are connected at 1/4-inch intervals by strands. These strands, in turn, are strongly reinforced at their junctures by stiffening members (two between each pair of ribs). All sheets are squared on both ends.

Kuehn's Specialmesh is scientifically designed to incorporate the best features of every type of such lath made, and to offer entirely new advantages.

RECOMMENDED WEIGHTS FOR MAXIMUM SPACING OF SUPPORTS

(lbs. per sq. yd.)

Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.75	16	16	16	12
3.0	19	19	19	16
3.4	19	19	19	16

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.75, 3.00, 3.40.

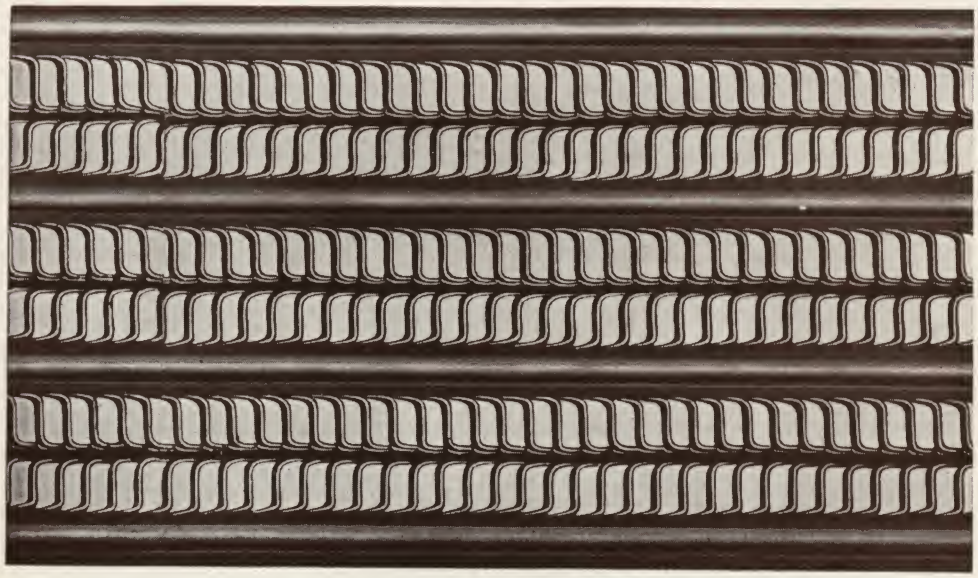
STEEL, GALVANIZED—3.40.

COPPER ALLOY STEEL, PAINTED—3.40.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—3.40.

STAY-RIB METAL LATH · · No. 1

MILCOR



DESCRIPTION

No. 1 Stay-Rib Lath is ideally adapted for interior plaster (especially ceilings).

It is designed for maximum rigidity and, due to its added metal surface, unusual economy of material—an adequate key, however, is assured. The longitudinal stiffening ribs are ½ inch wide, spaced 1¾ inches on center inter-connected at ¼-inch intervals by strands. These, in turn, are strongly reinforced at their centers by a stiffening member.

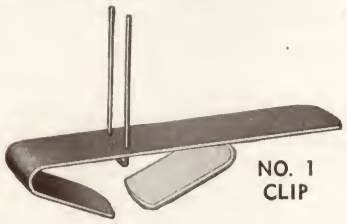
For both ceiling and wall plaster reinforcement, Milcor Stay-Rib No. 1 is unusually satisfactory. The rigidity of its rib and the character of its expanded design are factors in preventing plaster from falling during application. For suspended ceilings, Stay-Rib No. 1 saves money because it is exceptionally stiff and rigid. Fewer supporting runner channels and less labor are required because the spacing can be made much wider without impairing safety.

NO. 1 MILCOR METAL LATH CLIPS

Used with No. 2 Stay-Rib Metal Lath (see opposite page).

Milcor Lath Clip No. 1 is made in two parts: A flat metal strip and a strong "U" shaped tie wire. One end of the strap is formed into a hook shape at the factory, the other end is clinched around the flange of the beam on the job.

The photo below shows Stay-Rib Lath secured to I-Beam with the Milcor Metal Lath Clip. Note method of twisting wires.



NO. 1 CLIP

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.75, 3.00, 3.40, 4.00.

STEEL, GALVANIZED—3.40, 4.00.

COPPER ALLOY STEEL, PAINTED—3.40.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—3.40, 4.00.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

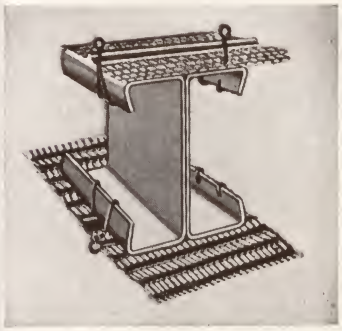
Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.75	16	16	16	16
3.0	19	19	19	16
3.4	19	19	19	19
4.0	19	19	19	19

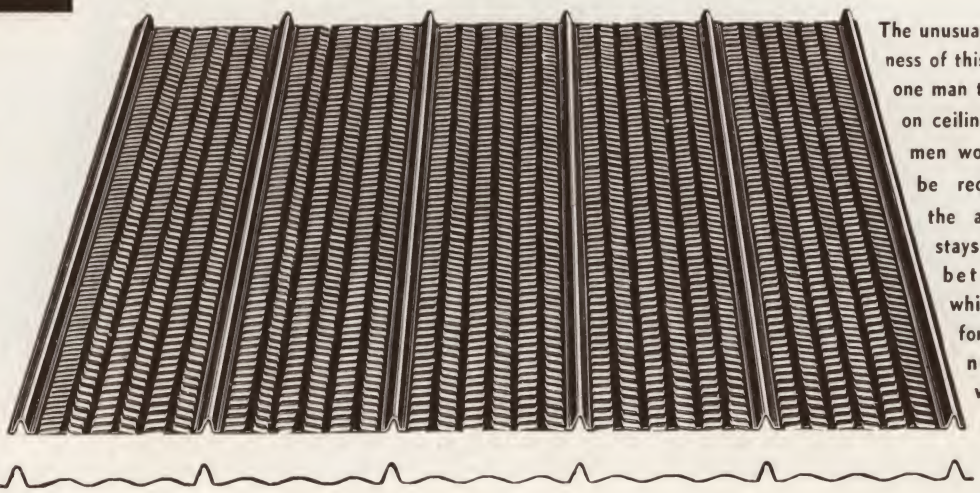
3/8" STAY-RIB METAL LATH · · No. 2

NO. 2 MILCOR METAL LATH CLIP

No. 2 Clip with design to facilitate the use of Stay-Rib Metal Lath in connection with metal lumber. This clip saves time and labor and insures maximum safety and perfect workmanship. The prongs are hooked over the edge of the metal lumber and twisted until the lath is securely fastened.

Weight of No. 2 Clip per thousand —9 lbs. Packed in cartons of 1000.





The unusual lateral stiffness of this lath enables one man to put a sheet on ceilings where two men would ordinarily be required. Note the angle of the stays or strands between ribs which accounts for a stiffness not possible with diamond mesh lath.

NO. 2 CLIP

DESCRIPTION

No. 2 Stay-Rib has 3/8-inch heavy longitudinal ribs spaced 4.8 inches on center with five stiffening members between ribs forming adequate reinforcement for the connecting strands spaced at 1/4-inch intervals.

It is ideal for all purposes where a self-furring lath is required.

Due to the strength and rigidity of the ribs, this lath effects very definite economies in both labor and material on furred or suspended ceilings where wide spacing of supporting cross channels is possible.

It is used extensively without supporting furring, **for ceilings attached directly to the joists** beneath steel dome reinforced concrete construction. Also ideal for both **ceilings and reinforcement** for floor slabs in **standard bar joist** floor and roof construction and for both **hollow and solid plaster partitions** in conjunction with metal studs or channels.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

Weights recommended	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
3.0	24	24	19	19
3.4	31½	31½	24	24
4.0	31½	31½	24	24

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.

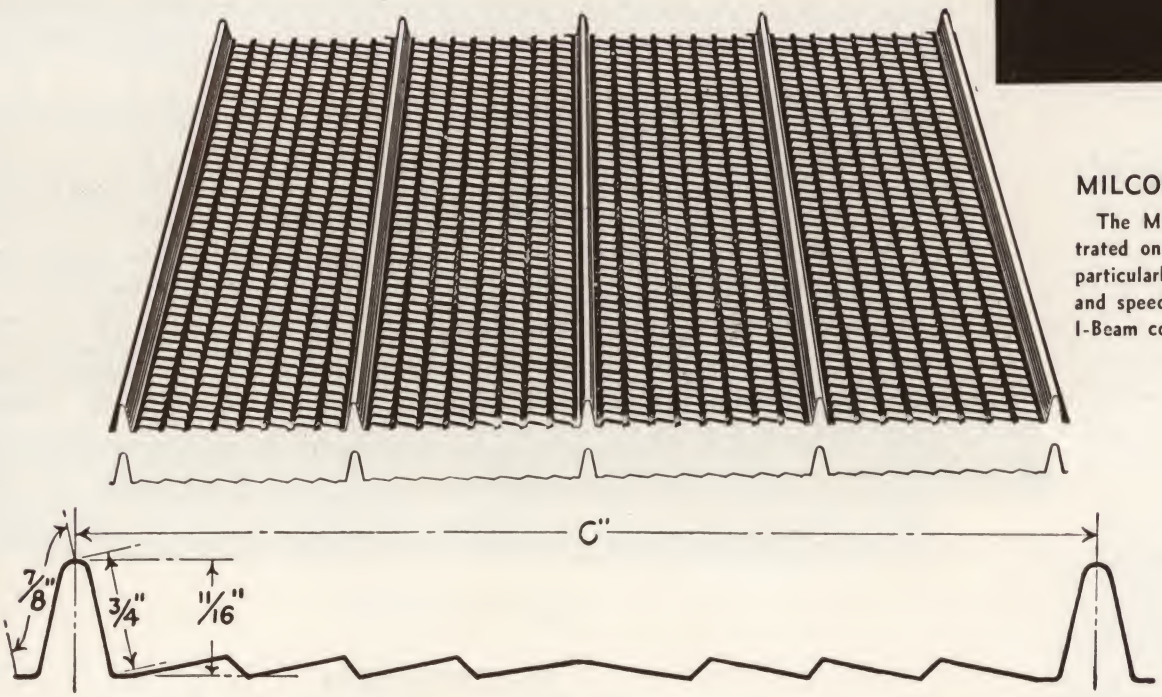
MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

STEEL, PAINTED—3.00, 3.40, 4.00.
STEEL, GALVANIZED—3.40, 4.00.
COPPER ALLOY STEEL, PAINTED—3.40.
INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—3.40, 4.00.

3/4" STAY-RIB METAL LATH · · No. 3

MILCOR



MILCOR RIB LATH CLIP

The Milcor Rib Lath Clip illustrated on Page 4 is recommended particularly for safety, convenience and speed of erection where steel I-Beam construction is used.

DESCRIPTION

No. 3 (¾ inch) Stay-Rib has ¾-inch heavy longitudinal ribs spaced 6 inches on center, with seven stiffening members between ribs, forming adequate reinforcement for the connecting strands spaced at ¼-inch intervals. The Milcor process of forming the heavy ribs is important. They are cold-drawn—not stamped—straight, true and uniform in shape with the sides of the rib sloped to insure maximum rigidity.

This lath is designed primarily as reinforcement for concrete floors and roofs, serving in addition as a form upon which wet concrete is poured. In this capacity it is most extensively used in connection with steel and bar joists. The lath may also be used in solid slab construction and may be curved to any required form. It is recommended that wherever curved sheets are required, the curving be accurately done **at the factory.**

Besides its adaptability for flat roof reinforcing, it is unexcelled in the construction of fire-safe pitched roofs, saw-tooth and monitor-type roofs and their adjoining wall or gable constructions.

No. 3 Stay-Rib is admirably adapted to the construction of solid plaster partitions where, due to the rigidity and reinforcing qualities of the ribs, no studs are required—the lath spans vertically from floor to ceiling.

Laid over wood joists, it is ideal as reinforcing for the concrete base for tile, terrazzo or composition flooring.

SPECIFICATION DATA

SHEET SIZE

The covering width of each sheet is 24 inches. **Standard sheets are 4, 5, 6, 7, 8, 9, 10, 11, and 12 feet long.** Sheets of intermediate length can be furnished, cut to exact lengths without extra cost (except that of stock waste).

MATERIALS AND WEIGHTS (lbs. per sq. ft.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

STEEL, PAINTED—.50; .60; .75.

STEEL, GALVANIZED—On order. .50; .75.

COPPER ALLOY STEEL, PAINTED—On order. .75.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—On order. .75.

CROSS SECTIONAL AREAS (sq. in. per ft. width.)

.50—.1235; .60—.1482; .75—.1977.

3/4" STAY-RIB METAL LATH · · No. 3

Milcor ¾-inch Stay-Rib Metal Lath No. 3 is admirably suited for use in solid partitions, with ribs perpendicular to the floor. No upright channels are required.

The lath sheets may be wholly or partially curved to any desired radius.

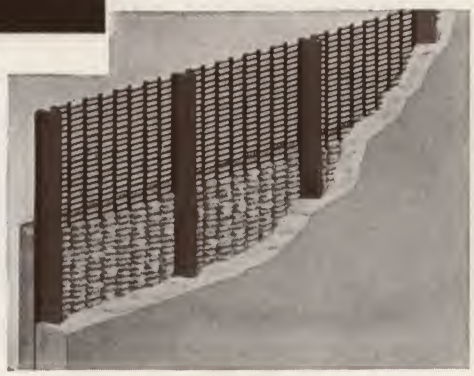


TABLE OF TOTAL SAFE LOADS

FOR CONCRETE SLABS REINFORCED WITH ¾-INCH STAY-RIB NO. 3

Assumed Conditions

Loads given are Live Loads plus Dead Loads.

Stress in steel—16,000 lbs. per sq. in.

Stress in concrete (fc) variable as per table—given in pounds per square inch.

Ratio on Modulus of Elasticity of Steel (Es) to Modulus of Elasticity of Concrete (Ec) = n = 15.

Distance of Center of Gravity of lath above bottom of sheet—.163 of an inch.

Resisting Moment (R. M.)—given in inch pounds per foot width.

Table based on moment of $\frac{WL}{10}$

Thickness of concrete, in.	Weight of slab, per sq. ft., lbs.	Weight of slab with ½ in. portland cement plaster on under side, lbs.	Weight of lath per sq. ft., lbs.	Resisting moment (R. M.) per foot of width	Stress in concrete in lbs. per sq. in. (fc)	Total Safe Loads in Pounds per Square Foot for Spans as Indicated in Feet								
						3 ft.	4 ft.	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.
2	24	30	0.50	3230	540	299	168	108	75	55				
2	24	30	.60	3840	600	355	200	128	89	65	50			
2	24	30	.75	5050	690	468	263	168	117	86	66	52		
2½	30	36	.50	4150	460	384	216	138	96	71	54	43		
2½	30	36	.60	4940	520	458	258	165	114	84	64	51		
2½	30	36	.75	6490	620		338	216	150	110	85	67	54	
3	36	42	.50	5084	410	470	265	170	118	87	66	52		
3	36	42	.60	6049	460	560	315	202	140	103	79	62	50	
3	36	42	.75	7960	550		415	266	184	135	104	82	66	55
3½	42	48	.50	6000	380	555	312	200	139	102	78	62		
3½	42	48	.60	7160	420		373	238	165	122	93	74	60	
3½	42	48	.75	9440	490		490	315	218	161	123	97	78	65
4	48	54	.50	6960	350		363	232	161	118	91	72	58	
4	48	54	.60	8289	390		432	276	192	141	108	85	69	57
4	48	54	.75	10920	460		568	364	252	186	142	112	91	75

Note: This table should not be used unless under side of slab is given a coat of portland cement plaster ½ inch thick.

WEIGHTS OF LATH FOR CARRYING WET CONCRETE OVER VARIOUS SPANS

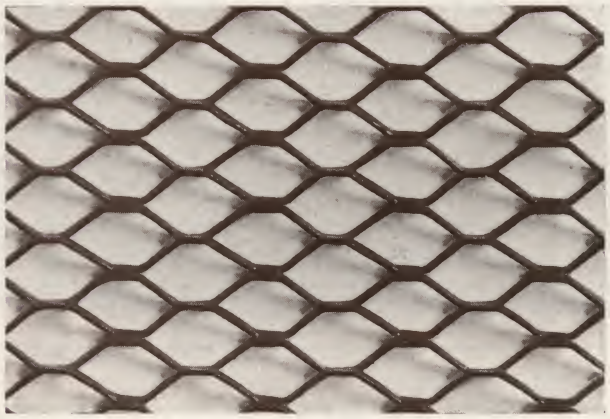
Weight of lath per sq. ft., lbs.	Allowable Spans for Wet Concrete Poured to Thickness Indicated				
	2-in. slab	2½-in. slab	3-in. slab	3½-in. slab	4-in. slab
0.50	3 ft. 3 in.	3 ft.	2 ft. 9 in.	2 ft. 6 in.	2 ft. 3 in.
.60	3 ft. 6 in.	3 ft. 3 in.	3 ft.	2 ft. 9 in.	2 ft. 6 in.
.75	4 ft.	3 ft. 9 in.	3 ft. 3 in.	3 ft.	2 ft. 9 in.

When longer spans than those given above are required, temporary supports should be used to maintain these maximum spacings.

NETMESH AND SMALMESH [EXPANDED DIAMOND MESH] METAL LATH

MILCOR

PLAIN



DESCRIPTION

Netmesh Metal Lath is $\frac{11}{32}$ inch by $\frac{9}{16}$ inch expanded Diamond Mesh produced by special machines and equipment, designed and built by Milcor engineers. Smalmesh is $\frac{9}{32}$ inch by $\frac{13}{32}$ inch expanded Diamond Mesh. Due to the close rigid mesh only a comparatively small amount of plaster is required to produce a perfect key with speed, ease and economy in plastering material.

Netmesh and Smalmesh are general utility laths ideally suited to the ordinary lathing need. They can be readily bent or formed for furred or ornamental members and for fireproofing of steel beams, girders, and columns.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete descriptions of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
*STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
*INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—2.50, 3.40.
*INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED—3.40.
*NO. 11 PURE ZINC—2.8.
*16-OZ. COPPER—3.0.

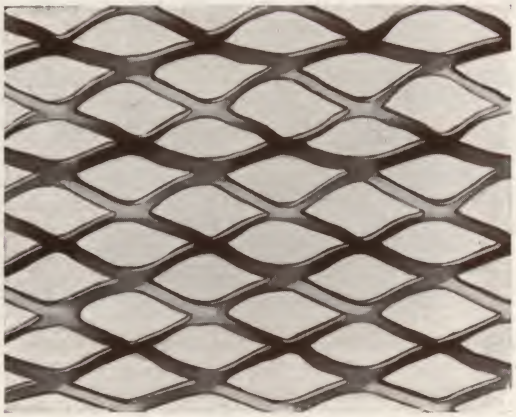
RECOMMENDED WEIGHTS (lbs. per sq. yd.)

Recommended weights	Distance Between Supports			
	Walls		Ceilings	
	Nailed on, in.	Tied on, in.	Nailed on, in.	Tied on, in.
2.5	16	12	....	....
3.0	16	13½	13½	12
3.4	16	13½	16	13½

Note: Expanded Metal Lath weighing 2.2 lbs. per sq. yd. is regularly manufactured and available for use in partitions where Underwriter's Standards are not exacted; it is also suitable for corner reinforcements (Corner Lath).

CORRUGATED

(SELF-FURRING)



DESCRIPTION

Netmesh and Smalmesh Corrugated Metal Laths have the characteristics of standard mesh with corrugations added running longitudinally (the length of the sheet). These laths are self-furring—no furring strips are required. The corrugations act as furring and allow the plaster or stucco base to fill in between the lath and the supporting stud, sheathing or wall forming an adequate key.

These laths are ideal for exterior stucco work, either back plastered (spanning studs without sheathing) or applied directly over sheathing covered with waterproof paper.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
*STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
*INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—2.50, 3.40.
*INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED—3.40.

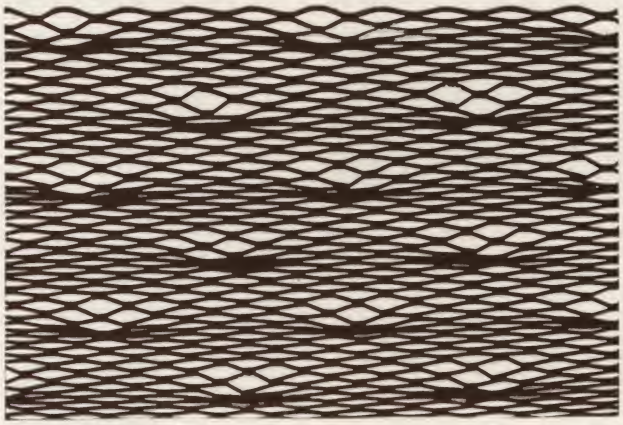
RECOMMENDED WEIGHTS (lbs. per sq. yd.)

OVER SHEATHING, ETC.—Studs 16 in. O. C., 2.50.
BACK-PLASTERED—Studs 16 in. O. C., 3.40.

*MADE IN 27 IN. WIDTHS ONLY.

FURLATH (SELF-FURRING EXPANDED DIAMOND LATH)
BIG-MESH (EXTRA LARGE DIAMOND FOR STUCCO)

FURLATH



DESCRIPTION

Furlath is a ⅜-inch mesh diamond expanded self-furring lath designed for exterior stucco. It has the general characteristics of Netmesh (see page 8). The self-furring feature consists of staggered indentations or stools spaced 3½ inches apart horizontally and 2 inches apart vertically, which hold the body of the lath ⅜ of an inch away from the sheathing or wall. The deforming has a stiffening effect and assures complete embedding of lath with the first coat of stucco and locates the reinforcement centrally in a continuous sheet. Furlath should be secured to the sheathing at depressions or stools with six-penny nails.

SPECIFICATION DATA

SHEET SIZE

24x96 in., packed 9 sheets (16 sq. yds.) per bundle.
27x96 in., packed 10 sheets (20 sq. yds.) per bundle.
All sheets are squared on both ends.

MATERIALS AND WEIGHTS (lbs. per sq. yd.)

Note: For complete description of materials, finishes, etc., see page 2.

STEEL, PAINTED—2.20, 2.50, 3.00, 3.40.
*STEEL, GALVANIZED—2.50, 3.40.
COPPER ALLOY STEEL, PAINTED—3.00, 3.40.
*INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, PAINTED—3.40.

RECOMMENDED WEIGHTS (lbs. per sq. yd.)

OVER SHEATHING, ETC.—Studs 16 in. O. C., 2.50.
BACK-PLASTERED—Studs 16 in. O. C., 3.40.
*Made in 27 in. widths only.

BIG-MESH

DESCRIPTION

Success with stucco requires not only a correct plastering base, but proper reinforcement as well. This reinforcement must be such that the plastering operation will easily and effectively make it an integral part of the stucco slab.

With these requirements in mind Milcor Big-Mesh Stucco Lath has been designed essentially for stucco work applied either by hand or "gunite" machine. It is expanded into diamond meshes 1½x3 inches with heavy connecting strands.

Furring Nail

Since reinforcement is the essential feature, furring is necessary. This is accomplished economically by the Milcor Furring Nail, 1½ inches long, equipped with a spacing device held close up into the mesh angles, placing the wings so that the conveying strands rest on its top edge, ⅜ of an inch out from the sheathing.

SPECIFICATION DATA

MATERIAL

COPPER ALLOY STEEL, PAINTED.

SHEET SIZE AND WEIGHT (lbs. per sq. yd.)

48x96 in., 1.8 lbs., packed 10 sheets (35 5/9 sq. yds.) per bundle.
48x96 in., 3.6 lbs., packed 10 sheets (35 5/9 sq. yds.) per bundle.
All sheets are squared on both ends.

APPLICATION

Beginning at the top, apply with the long dimension horizontally. Bend sheets around all corners and angles. Lap sheets one full diamond at junctures. Space furring nails (staggered) not more than 10 inches O. C. vertically and 12 inches O. C. horizontally.

MILCOR SILVERCOTE
(INSULATING PLASTER BASE)
AND STEELKRAFT

MILCOR

INSULATING PLASTER BASE

This modern combination insulation and plaster base development consists of highly reflective, corrosion-proof insulation combined with Milcor Metal Lath—the recognized plaster base.

The surface of Silvercote consists of a mineral, homogeneous pigment polished into a silver-like sheen which reflects radiant heat and establishes exceptional insulation values. The surface possesses the following essential properties:

1. The surface is mineral and will not oxidize or corrode.
2. The surface is waterproof and cannot absorb moisture.
3. The surface is impervious to air filtration and non-conductive to electrical or thermal energy.
4. The surface is vermin proof.
5. The surface is not affected by alkalies contained in plaster or by any of the acids or gases encountered in the customary uses of thermal insulation.

Milcor Silvercote possesses all of the required factors of an ideal reflective insulation combined with the known values of metal lath as a plastering base. The reflective type is the most efficient and scientific type of insulation. The Silvercote process of reflective insulation is the most practical and durable of this type. That combined with the unquestioned value of metal lath as a plastering base attached thereto gives Milcor Silvercote a standing in the insulation field above all others.

This surface layer of 47-lb. bleached Kraft base is attached to a 90-lb. Kraft by a layer of asphaltum. This duplex moisture proof product is then attached to Milcor Metal Lath by staples.

WEIGHT OF MILCOR SILVERCOTE— Weight—337 lbs. per 1000 sq. ft Bundled 10 sheets, 24x97 in., 160 sq. ft. to the bundle.

Plaster is easily applied to Milcor Silvercote. The mesh assures a perfect bond and the plaster is completely embedded in the lath.

MILCOR STEELKRAFT

SteelKraft is a combination of special heavy paper backing and Netmesh, Smalmesh or Furlath to which it is attached. The paper backing is a combination of waterproof paper and absorbent paper held together by a layer of asphalt. The absorbent side is next to the lath. The advantages are the same as Milcor Silvercote except for the reflective insulating feature.

SHEET SIZE—24x96 in. Packed 9 sheets (16 sq. yds. per bundle). The paper backing is short on two sides to allow for approximately one inch lap of metal lath.

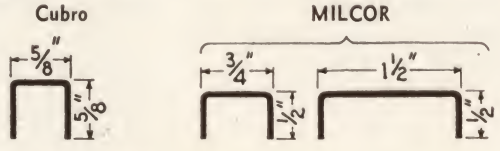
MILCOR COLD ROLLED CHANNELS

Milcor Pressed Steel Channels are cold rolled and present a level surface on all three sides. They are accurately pressed at perfect right angles, uniform and straight their entire length.

MAXIMUM PERMISSIBLE HEIGHTS (NON-BEARING PARTITIONS)

Note: Comparison of these maximum permissible heights with those of other fireproof partition materials will show the wide margin by which this construction exceeds.

¾-IN. CHANNELS—2 in. thick solid—10 ft.; 2½ in. thick solid—12 ft.
1-IN. CHANNELS—2 in. thick solid—12 ft.; 2½ in. thick solid—16 ft.
1½-IN. CHANNELS—2½ in. thick solid—22 ft.; 3 in. thick solid—24 ft.
TWO ¾-IN. CHANNELS—3 in. or more hollow—24 ft.



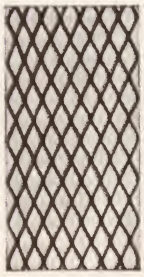
WEIGHT PER 1000 LINEAL FEET

⅝-IN. CUBRO CHANNELS—270 lbs.; ¾-IN. CHANNELS—332 lbs.; 1-IN. CHANNELS—442 lbs.
1½-IN. CHANNELS—552 lbs.; 2-IN. CHANNELS—645 lbs.

MILCOR
Diamond-Mesh Expanded
Corner Lath

(FOR INNER CORNERS AND CEILING ANGLES)

CORNER LATH



LATH STRIP

SPECIFICATION DATA

General Characteristics

Milcor Corner Lath consists of strips of Netmesh (see page 8) ⅜-in. diamond expanded lath with finished edges—not rough or ragged. Required as reinforcing over all re-entrant angles over wood or rib metal lath where inner angle bead is not used for the same purpose.

SIZES—Corner Lath have 3 and 4-in. wing width and are 8 ft. long. Lath Strips are 3, 4 or 6 ins. wide and 8 ft. long. Packed approximately 500 lin. ft. per crate.

MATERIALS—Sheet steel, painted or galvanized; copper alloy steel; Inland Pure Iron, Armco Ingot Iron or Toncan Iron, painted or galvanized.

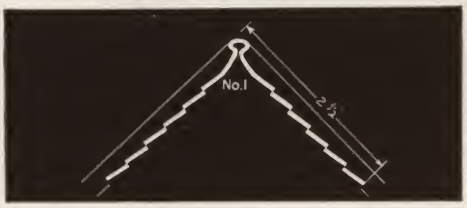
No. 1 EXPANSION (2½") 5" WING, 24-GAUGE EXPANSION CORNER BEADS

NO. 1 MILCOR EXPANSION CORNER BEAD
FOR OUTER OR EXPOSED ANGLES

Fabricated from No. 26 gauge and No. 24 gauge tight coat galvanized steel or Inland Pure Iron, Armco Ingot and Toncan Iron, also pure zinc and cold rolled copper. Lengths of 6, 7, 8, 9, 10, 11 and 12 feet. Weight per 1,000 feet: No. 26 gauge, 230 lbs, crated; No. 24 gauge, 300 lbs. Packed 500 feet to the crate. Patents Nos. 1,419,232 and 1,482,600.

All Milcor Expansion Corner Bead packed in wooden crates.

Look for the lettering: "Milcor Expansion Corner Bead" which is stamped on the side of each bead. Demand the genuine. Refuse imitations



No. 1 Expansion

DESCRIPTION—The exclusive feature of Milcor Expansion Corner Beads is the use of Expanded Diamond Mesh reinforcement in the wings or webs instead of practically solid members as in other types. The wings of expanded metal permit keying the plaster right up to the bead. Every square inch of these wings reinforces the plaster. There are no smooth surfaces to which the plaster may or may not "stick." The result is effective reinforcement where it is most needed . . . and substantial assurance that the plaster corners will withstand much more than the average abuse.

Milcor Expansion Corner Bead can be wired, stapled, stuck or nailed to any kind of wall construction at lowest cost—no clips are necessary.

GENERAL CHARACTERISTICS—Narrow rounded nose. Standard wing width 2½ inches with finished edges—not rough or jagged. Obtainable (special) with one narrow wing—1, 1¼, 1½, 1¾, 2, 2¼, or 2½ inches wide. A general utility corner bead.

5-in. Wing, 24 Gauge Expansion

DESCRIPTION—Milcor 5-inch Wing, 24-gauge Expansion Corner Bead has the same advantages as No. 1 Expansion Corner Bead with the additional feature of full 5-inch wings of expanded metal.

There is economy due to saving in material and labor through the use of Milcor 5-inch Wing Expansion Bead on work where it would be necessary to use a strip of metal lath in connection with a narrow wing bead.

Columns are formed more easily . . . on beams, mullions, pilasters and corners the 5-inch wings save time and labor.

MILCOR Corner Bead Setter

The Milcor Corner Bead Setter makes precision corners certain and enables one man to set more corner bead of small nose type than two men can by old methods. Three spirit levels make this bead setter practical for either perpendicular or horizontal positions.

SPECIFICATION DATA
No. 1 Expansion
MATERIALS, WEIGHTS, ETC.

Note: For complete description of materials, finishes, etc., see page 2.

SHEET STEEL, GALVANIZED—26 gauge—230 lbs. per 1,000 lin. ft.; 24 gauge—300 lbs. per 1,000 lin. ft.; 6, 7, 8, 9, 10, 11 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED—26 gauge—230 lbs. per 1,000 lin. ft.; 24 gauge—300 lbs. per 1,000 lin. ft.; 6, 7, 8, 9, 10, 11 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

PURE ZINC—No. 11—290 lbs. per 1,000 lin. ft.; 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

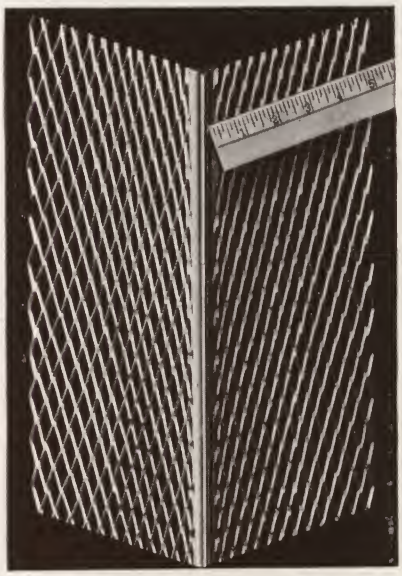
COLD ROLLED COPPER—16 oz.—230 lbs. per 1,000 lin. ft.; 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

SPECIFICATION DATA
5-in. Wing
MATERIALS, WEIGHTS, ETC.

SHEET STEEL, GALVANIZED—24 gauge—430 lbs. per 1,000 lin. ft. crated. Packed approximately 500 ft. per crate.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED—24 gauge—430 lbs. per 1,000 lin. ft. crated. Packed approximately 500 ft. per crate.

LENGTHS—Same as No. 1 Expansion Corner Bead.



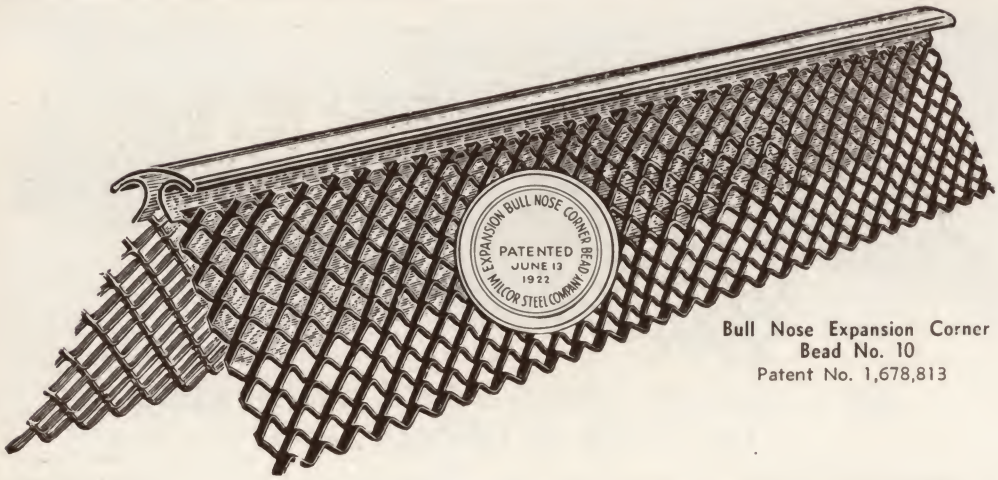
Milcor 5-in. Wing, 24 Gauge Expansion Corner Bead

Has expanded metal wings full 5 inches in width. Patent Nos. 1,419,232 and 1,482,600. Other patents pending.

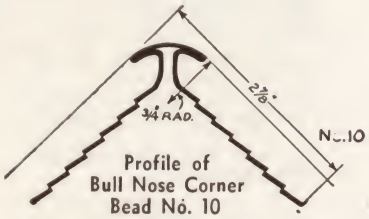
No. 10 BULL NOSE EXPANSION CORNER BEAD

No. 11 *(Reinforced)* BULL NOSE EXPANSION CORNER BEAD

MILCOR

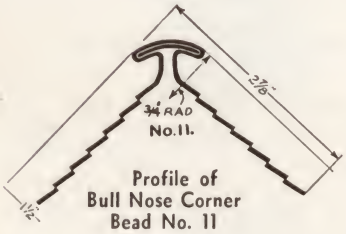


Bull Nose Expansion Corner Bead No. 10
Patent No. 1,678,813



Profile of Bull Nose Corner Bead No. 10

Bull Nose Corner Bead No. 11—with Reinforced Nose



Profile of Bull Nose Corner Bead No. 11 Showing Reinforcement

DESCRIPTION

GENERAL CHARACTERISTICS—No. 10 Bull Nose Expansion Corner Bead is ideal where broad, heavy, curved corners are desired for sanitary conditions, for pleasing appearance, and for supreme protection of plastered walls against heavy furniture, carts, wheel chairs and other objects which are moved frequently.

The Bull Nose Bead has the same advantages as the narrow nose, regular Expansion Corner Bead No. 1.

One-inch nose (¾-inch radius). Standard wing width 2¾ inches with finished edges—not rough or ragged. Specially adapted for hospitals, hotels, schools, institutions and office buildings. Specify joints at miters cut with Milcor Coping Machine.

No. 11 Bull Nose Expansion Corner Bead is furnished with reinforced nose as shown in illustration above. This extra strength is desirable when particularly hard usage is anticipated. Reinforcing strip can be 26, 24 or 20 gauge sheet steel.

All Milcor Corner Beads are neatly and securely packed in heavy wooden crates. This ultra-safe packing precludes any possibility of damage in transit or on the job. The beads come to you precisely straight and true.

SPECIFICATION DATA

MATERIALS AND WEIGHTS—Note: For complete description of materials, finishes, etc., see page 2.

SHEET STEEL GALVANIZED—26 gauge—375 lbs. per 1,000 lin. ft., crated; 24 gauge—470 lbs. per 1,000 lin. ft., crated 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED—26 gauge—375 lbs. per 1,000 lin. ft., crated; 24 gauge—470 lbs. per 1,000 lin. ft., crated. 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

COLD ROLLED COPPER—16 oz.—470 lbs. per 1,000 lin. ft., crated. 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

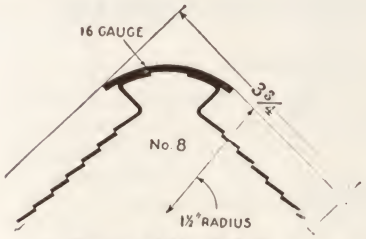
Note: Weights of No. 11 are heavier according to gauge of reinforcing strip used.

COPING MACHINE

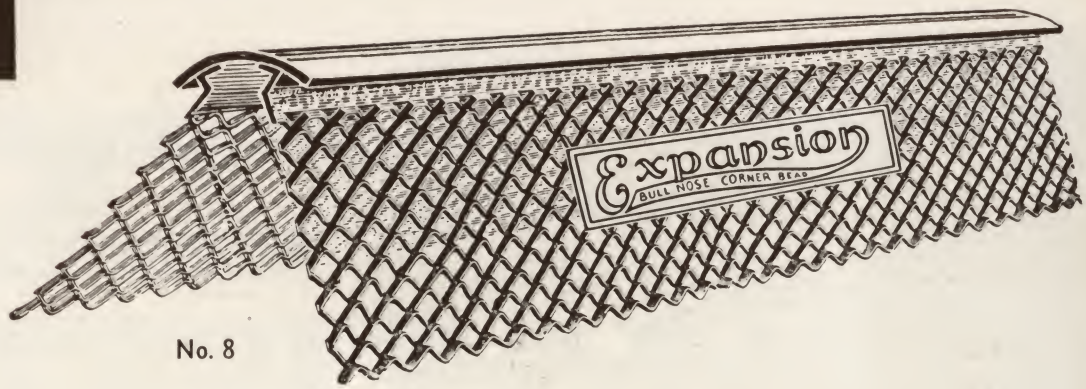
A special portable Coping Machine, which can be set up anywhere on the job, is used to cut the broad Bull Nose for precise, tightly fitting corners.

NOS. 8 AND 9 BULL NOSE CORNER BEADS

WITH EXPANDED METAL WINGS



Profile of No. 8 Bull Nose Corner Bead



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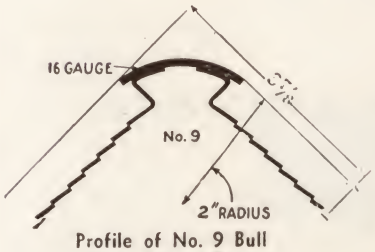
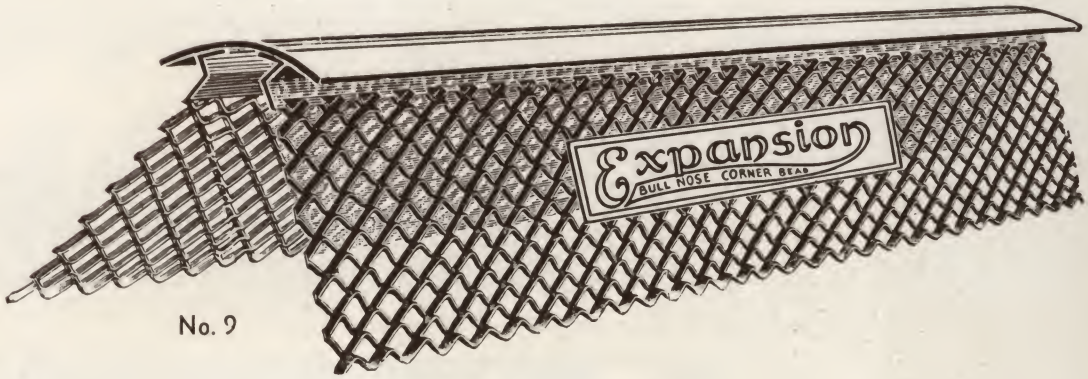
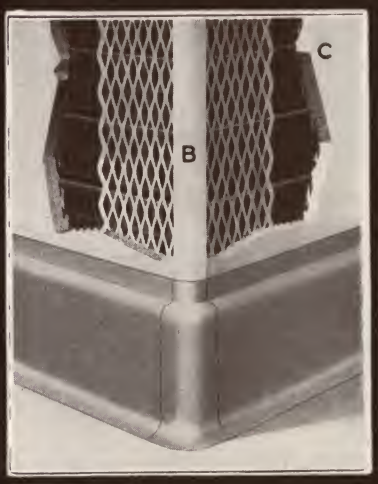


Profile of No. 9 Bull Nose Corner Bead



No. 9



CORNER SHOWING BULL NOSE CORNER BEAD No. 8 IN POSITION IN PLASTERED WALL

With portion of base exposed to show: "B" — the exposed solid bull nose of the bead and its expanded metal; and "C" — Stay-Rib Metal Lath No. 1.

DESCRIPTION

GENERAL CHARACTERISTICS—No. 8 Bull Nose Corner Bead with expanded metal wings is for use where extra broad, heavy, curved corners are desired. The 16-gauge nose of the Bead has a face 2⅛ in. in width, curved to a 1½-in. radius. 24-gauge Expanded Metal Wings of standard 2¾ in. width are spotwelded to the broad nose of the bead in such manner as to reinforce the heavy face of the bead. This construction gives the No. 8 Bull Nose the same advantages as the regular Milcor Expansion Corner Bead in addition to the broad nose feature.

No. 9 Bull Nose Corner Bead is similar to No. 8 except that it has a face 2¼ in. wide, curved to a 2-in. radius.

SPECIFICATION DATA

MATERIALS AND WEIGHTS— Note: For complete description of materials, finishes, etc., see page 2.

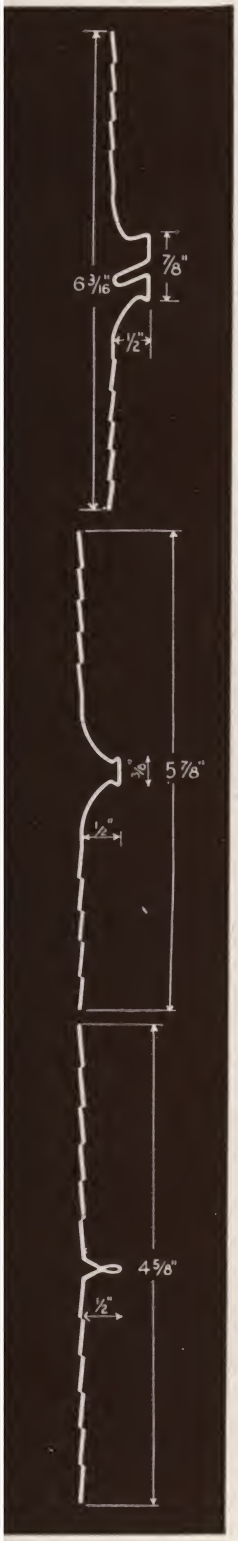
SHEET STEEL — Tight-coat, galvanized, 16-gauge nose and 24-gauge expanded metal wing. No. 8—1,000 lbs. per 1,000 lin. ft., crated. No. 9—1,050 lbs. per 1,000 lin. ft., crated; 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin. ft. per crate.

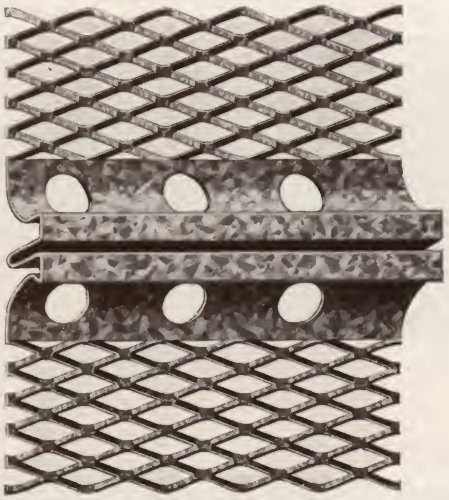
INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON, GALVANIZED —No. 8—1,000 lbs. per 1,000 lin. ft., crated. No. 9—1,050 lbs. per 1,000 lin. ft., crated; 6, 7, 8, 9, 10 and 12 ft. long. Packed approximately 500 lin ft. per crate.

PICTURE MOULD AND BASE SCREEDS WITH EXPANSION WINGS

Patents Nos. 1 419,232 and 1,482,600

MILCOR





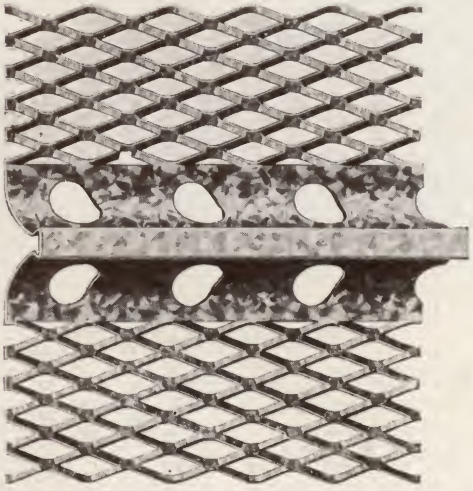
NO. 17 EXPANSION PICTURE MOULD

SPECIFICATION DATA

GENERAL CHARACTERISTICS—Milcor Picture Mould with Expansion Wings—No. 17 has a wide metal surface flush with the plaster line. It is permanent, sturdy and sanitary, forming a rigid, dependable support for the heaviest decorations. The Expansion Wing forms a strong plaster reinforcement both above and below the moulding.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON—26-GAUGE, GALVANIZED—400 lbs. per 1,000 lin. ft., 10 ft. long, crated. Packed approximately 500 lin. ft. per crate.

Note: For complete description of materials, finishes, etc., see page 2.



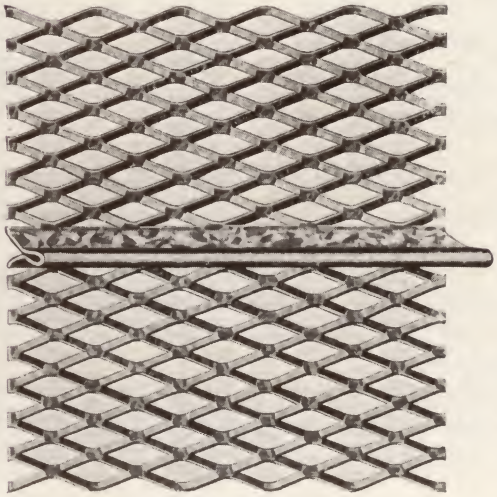
NO. 18 FLUSH BASE SCREED WITH EXPANSION WINGS

SPECIFICATION DATA

GENERAL CHARACTERISTICS—This is a new type Flush Base Screed with Patented Expansion Wings. It is characterized chiefly by the wide flat nose which forms a dividing strip between plaster and flush cement base. Expansion Wings reinforce both plaster and cement and guard against cracks.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON—26-GAUGE, GALVANIZED—300 lbs. per 1,000 lin. ft., 10 ft. long, crated. Packed approximately 500 lin. ft. per crate.

Note: For complete description of materials, finishes, etc., see page 2.



NO. 3 EXPANSION BASE SCREED

SPECIFICATION DATA

GENERAL CHARACTERISTICS—A firm, rigid metal dividing strip set between plaster and flush cement base with the advantages of 2¾-inch wings of strong mesh lath reinforcement against any possibility of cracks at juncture.

MATERIALS, WEIGHTS, ETC.—SHEET STEEL, GALVANIZED; INLAND PURE IRON, ARMCO INGOT OR TONCAN IRON—26-GAUGE, GALVANIZED—230 lbs. per 1,000 lin. ft., 10 ft. long. Packed 500 lin. ft. per crate. Also furnished in zinc and copper.

Note: For complete description of materials, finishes, etc., see page 2.

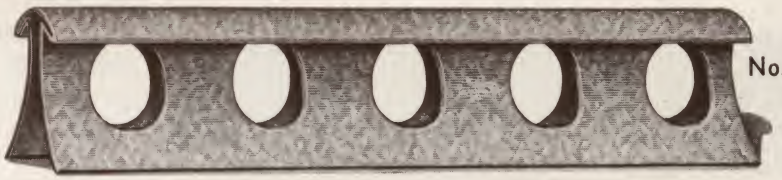
OLD STYLE METAL CORNER BEADS

NO. 5 BULL NOSE CORNER BEAD

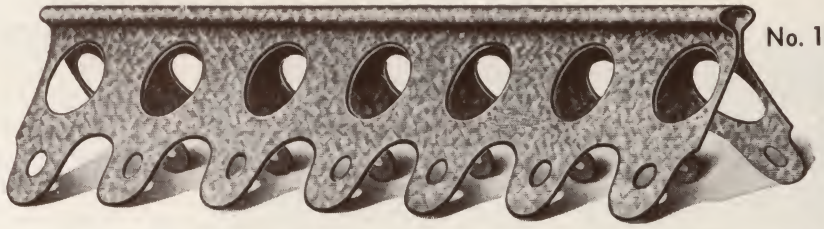
MATERIAL — No. 26 and No. 24 gauge sheet steel.

LENGTHS—5, 6, 7, 8, 9, 10 and 12 feet.

APPROXIMATE WEIGHTS — No. 26 gauge — 290 lbs. per 1,000 ft., crated; No. 24 gauge — 410 lbs. per 1,000 ft., crated. Packed 500 lin. ft. per crate.



No. 5



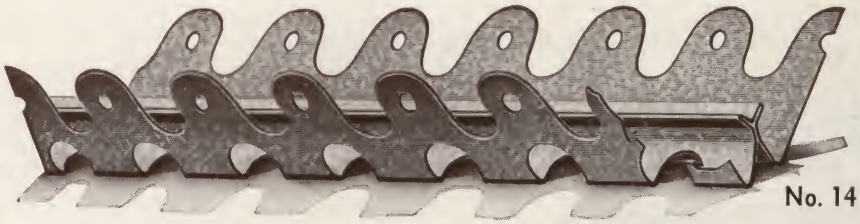
No. 13

NOS. 13 AND 14 "SUPERIOR" CORNER AND INNER ANGLE BEADS

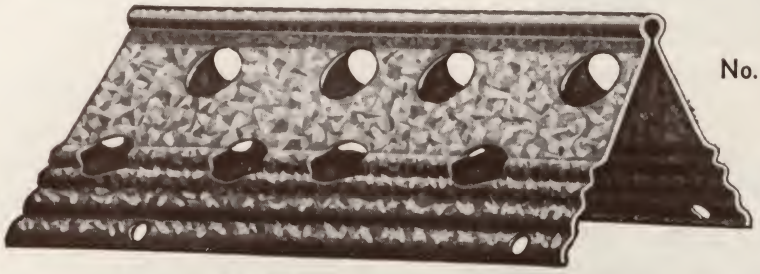
MATERIAL — No. 26 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—220 lbs. per 1,000 ft., crated. Packed ten pieces of uniform length to the bundle; 500 ft. per crate.



No. 14



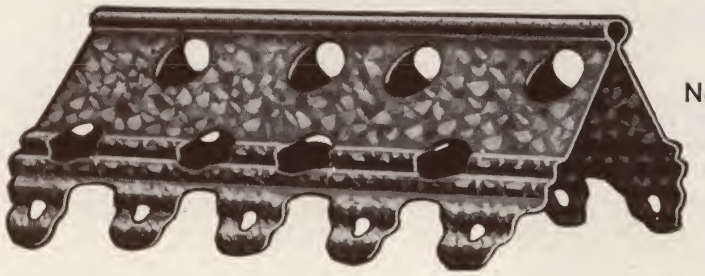
No. 12

NO. 12 EXTRA WIDE FLANGE CORNER BEAD AND NO. 19 WIDE FLANGE SCALLOPED EDGE CORNER BEAD

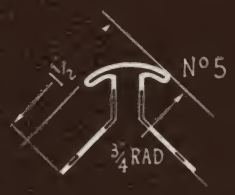
MATERIAL—No. 26 or No. 24 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT—No. 26 gauge —370 lbs. per 1,000 ft., No. 24 gauge—500 lbs. per 1,000 ft. Packed 500 ft. per crate.



No. 19



GENERAL CHARACTERISTICS—For the less important work where cost is a prime factor and corner beads with the Milcor Patented Expansion Wings are not warranted, the Milcor Steel Company continues to manufacture a complete line of Old-Style Metal Corner Beads comparable in both material and design to the best of this style sold competitively.

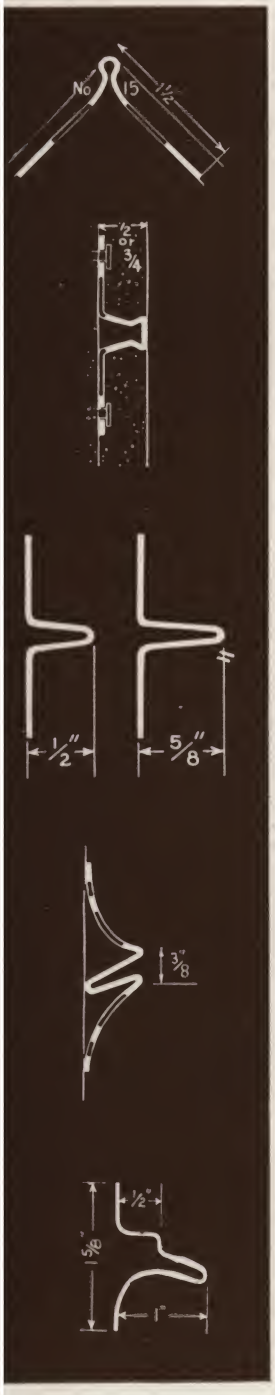
NOTE: For complete description of materials, finishes, etc., see page 2.

NOTE. For complete description of materials, finishes, etc., see page 2.

OLD STYLE METAL CORNER BEADS, SCREEDS, ETC.

(FOR CORNER BEADS WITH EXPANSION WINGS, SEE PAGES 11 to 13)

MILCOR



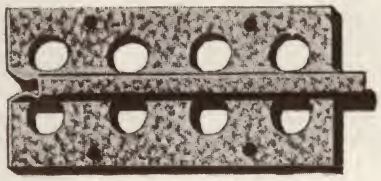
No. 15 "Milcor" Corner Bead

NO. 15 "MILCOR" CORNER BEAD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTHS—6, 7, 8, 9, 10 and 12 ft.

APPROXIMATE WEIGHT — 185 lbs. per 1,000 ft., crated. Packed 500 ft. per crate



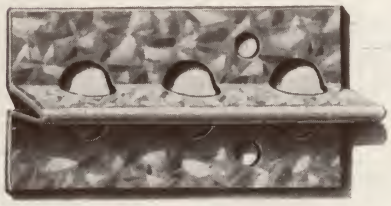
No. 61 Wide Nose Base Screed

NO. 61 WIDE NOSE BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 195 lbs. per 1,000 ft., crated.



No. 77 Plain Base Screed

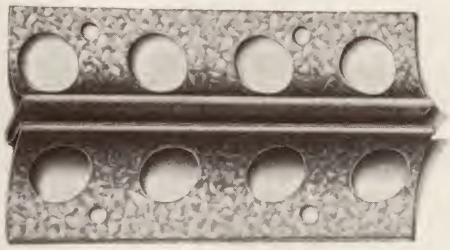
NO. 77 PLAIN BASE SCREED— Stocked in ½-inch, ⅝-inch, and ¾-inch Grounds

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 175 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

Hump Corner Bead Clip (Black Steel)



No. 70 Concealed Picture Mould

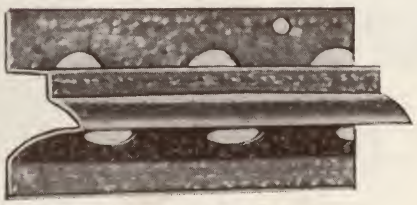
NO. 70 CONCEALED PICTURE MOULD

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 220 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

Universal Corner Bead Clip (Galvanized)



No. 74 Curved Point Base Screed

NO. 74 CURVED POINT BASE SCREED

MATERIAL—No. 26 gauge sheet steel, galvanized.

LENGTH—10 ft.

APPROXIMATE WEIGHT — 195 lbs. per 1,000 ft., crated. Packed 1,000 ft. per crate.

THE MILCOR SOLID PARTITION AND FURRING SYSTEM . . .

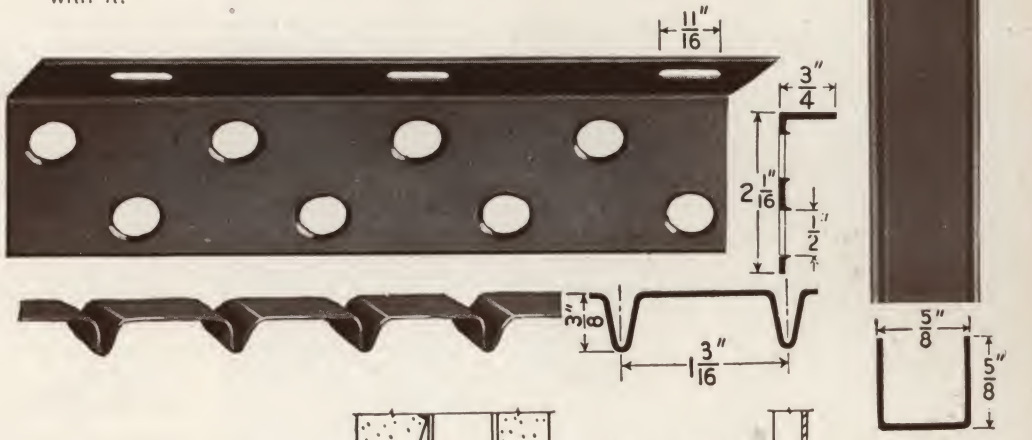
SIMPLIFIES ERECTION AND LOWERS CONSTRUCTION COSTS

THE MILCOR SYSTEM FOR 2-INCH SOLID PARTITIONS

(Patents Pending)

Three units provide the steel to hold metal lath in the Milcor Solid Partition System. They are the Ceiling Angle Runner, Specially Slotted Channel Stud, and Continuous Crimped Floor Runner. This method offers a distinct saving in time and cost.

The same units as used for Solid Partitions may be employed in erecting free-standing Furring walls. This wall may be placed at any desired distance from the outside wall and does not have any contact with it.



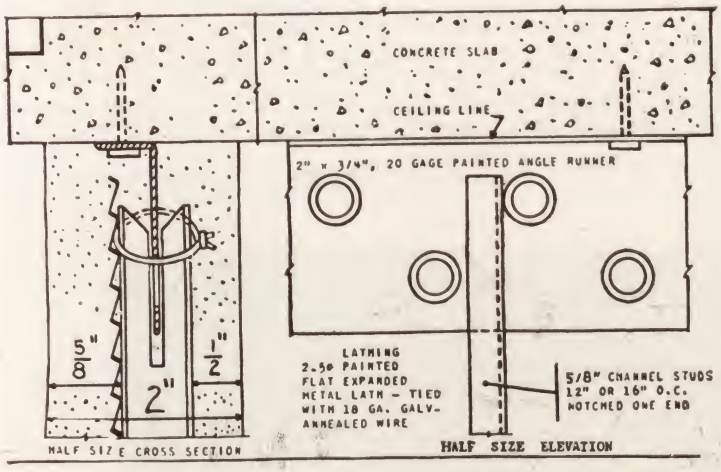
STEEL MEMBERS IN MILCOR SYSTEM ERECTED IN THREE SIMPLE OPERATIONS

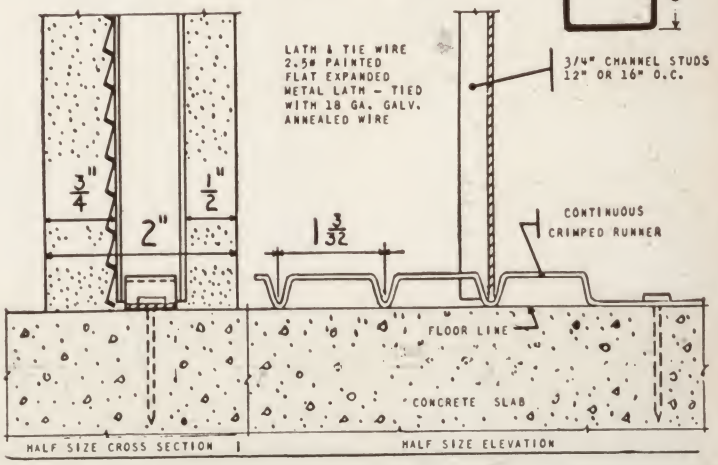
CEILING ANGLE RUNNERS are attached to the ceiling with bolts, nails, or rawl drives. A burr on the holes in the CEILING RUNNER holds the Specially Slotted Channel in position.

SPECIALLY SLOTTED CHANNEL STUDS used in Milcor Solid Partitions are notched and slotted as illustrated. The slotted end is slipped on to the Ceiling Angle Runner and the other end is dropped into the Crimped Floor Runner.

CONTINUOUS CRIMPED RUNNERS are attached to the floor with nails, bolts or rawl drives directly beneath the Ceiling Angle Runner.

It is not necessary to wire Channels to either ceiling or floor runners before the lath is applied. Such wiring can be done if desired when lath is wired on channels.





MILCOR COVE LATH

Patent No. 1,975,242

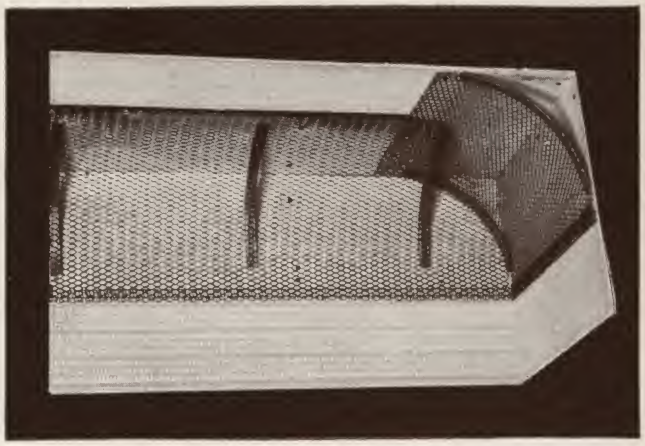
MAKES PERFECT COVES . . . SAVES FUSSY WORK

DESCRIPTION—Milcor Cove Lath is made from 3.4 lb. Diamond Mesh Lath electrically welded to curved channel sections spaced 16 inches on center. Its use saves the time ordinarily consumed in cutting wood brackets and provides a steel plaster base to join wall and ceiling—the greatest insurance against plaster cracks. The Cove is made with radii of 6¾, 8¾ and 10¾ inches for a finished plaster surface of 6, 8, and 10 inches.

SPECIFICATION DATA. Dimensions: Furnished in sheets 8 feet long with 6¾, 8¾, and 10¾ inches actual radii.

Packing: Furnished either bundled or crated, packed 20 pieces or 160 feet per bundle or crate.

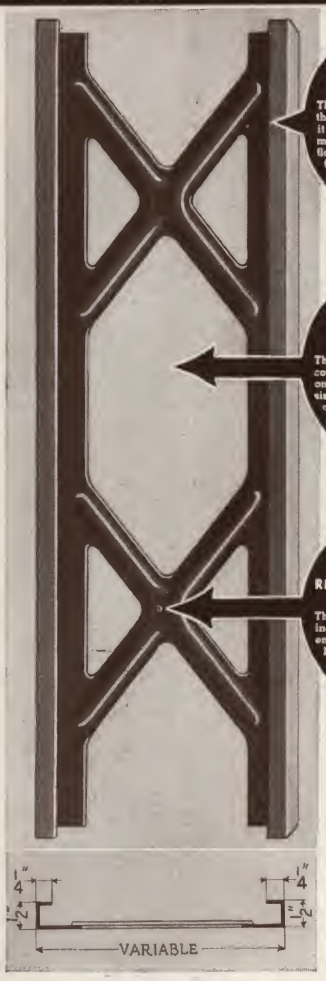
Weights per 1000 feet: 6¾ radius, 450 lbs.; 8¾ radius, 600 lbs.; 10¾ radius, 725 lbs.



Milcor Cove Lath is exceptionally simple to miter. One section of the lath can butt up against the wall on inside corners and it is therefore only necessary to cut the other piece at an angle.

MILCOR STEEL STUD

MILCOR



Patent Applied For

The width of the chords in all sizes is three-quarters of an inch. This uniform width permits the use of ¾ inch furring channels where necessary between studs.

THE NEW EMBOSSED X-SHAPED MILCOR STEEL STUD EMBODIES ADVANCED ENGINEERING DESIGN AND A GREAT NUMBER OF ADVANTAGES TO THE USER.

FIRE-SAFETY—Milcor Hollow Partitions with Metal Lath are given a one to two hour fire rating, depending upon plaster used.

EARTHQUAKE RESISTANCE—Architects and Engineers agree that there is no other type of partition construction which will resist earthquakes, explosions, etc., as much as that made with Steel Studs and Metal Lath.

INSULATING VALUE—Because the partitions are hollow they have exceptional insulating value. If additional insulation is desired the application of any of the many insulating materials is easily made in connection with the Steel Stud.

SOUND RESISTANCE—Hollow Partitions are effective barriers to sound. Their sound insulating value compares favorably with clay or gypsum partitions which weigh a great deal more.

LIGHT WEIGHT—The use of the Steel Stud permits economical construction design because of its light weight as compared to other types of partitions.

ELIMINATION OF PLASTER CRACKS—Steel Studs are not affected by moisture, cannot swell, warp or split. They are held firmly in place and eliminate the principal causes of plaster cracking when used in connection with Metal Lath.

Milcor Steel Studs when used with Metal Lath and plaster produce a partition-strength equal to, or greater than, tile or Gypsum block of equivalent thickness. Moreover they have two indisputable advantages over masonry partitions:

First—Extraordinary resistance to explosion.

Second—An absolute tie to floor and ceiling.

STANDARD SIZES AND WEIGHTS

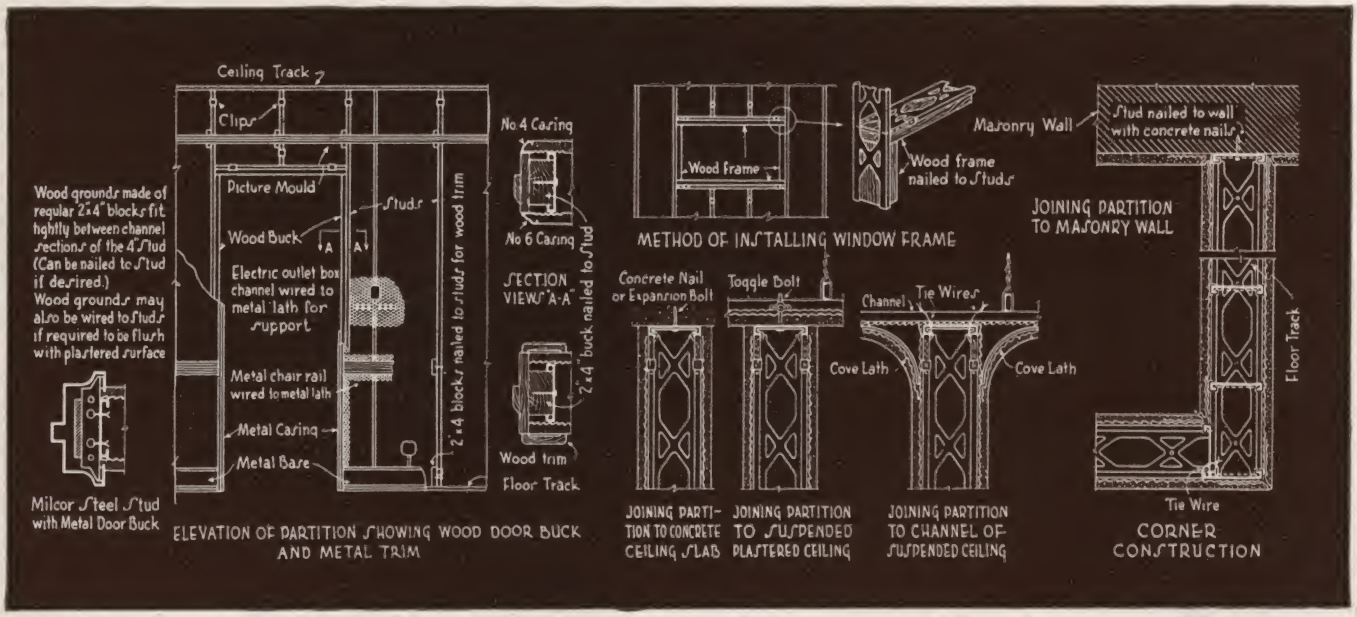
MILCOR STEEL STUDS are made in six standard sizes as follows: 2, 2¼, 3, 3¼, 4 and 6 inches

WEIGHTS—POUNDS PER 1,000 FEET

2 inch size—500 lbs.	3 inch size—660 lbs.	4 inch size—700 lbs.
2¼ inch size—570 lbs.	3¼ inch size—720 lbs.	6 inch size—880 lbs.

MILCOR STEEL STUDS are furnished in stock lengths from 6 feet to 24 feet at intervals of one foot. Track is always in 10 foot lengths. Intermediate lengths cut from next longer stock length.

MILCOR STEEL STUDS can be furnished with an "open track"—without the extra lip which forms the channel section at the side of the stud. Made on order at no additional cost.



MILCOR STEEL STUDS are adaptable to every type of fireproof construction. Expansion corner beads, picture mould, chair rails, metal or wood casing, metal door bucks, wood or metal window frames, wood or metal base, cove lath and other equipment are applied in the regular manner.

for HOLLOW PARTITION CONSTRUCTION

THE COST SAVING FEATURES OF THE MILCOR STEEL STUD RIVAL ITS ADVANTAGES FOR STRONG SATISFACTORY CONSTRUCTION

Undeniable savings in erection are achieved because of:

1—Remarkably quick attachment with the MILCOR SHOE.
2—Variety of positions in which the same shoes and studs may be locked.
3—Elimination of confusion with materials—only one standard unit.
4—Large, uniform openings enable quick installation of pipes and conduits.
5—Exceptional strength requires less horizontal bridging.
6—Quickly cut to length on the job or pre-cut if desired.
7—Channel sides guard against damage in transit.
8—Practically no cleaning up costs after installation.

The above savings are of definite value as every architect and contractor knows. They include things that cost real dollars and cents on the job.

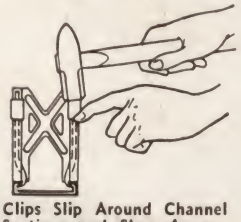
Milcor Shoe for Steel Stud

Complete Application of Shoe—With Stud Attached to Floor Runner

External Type Shoes May Be Used with the Milcor Steel Stud if Desired

hoe is Slipped into Channel Sections of Floor Runner and Stud as Shown

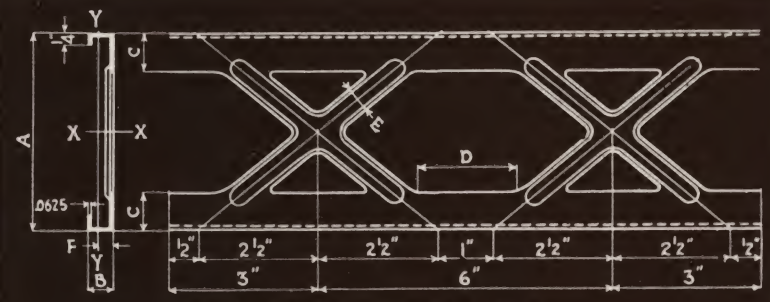
Shoe is Wedged into Floor Runner by Tapping with Hammer



Clips Slip Around Channel Sections and Shoe Arms—Wedged Tightly with One Blow of Hammer

The shoe fits into the channel sections of the members to be joined, is quickly wedged into the floor runner by tapping with a hammer and to the stud section with special clips. External shoes may be used if desired. With the Milcor shoe a firm attachment of the stud can be made to floor or ceiling runners and also to studs in horizontal position. Thus a number of combinations can be built up to allow for openings of any desired size—at the same time retaining a steel foundation of extreme rigidity.

The ease of installation of electrical conduits, water pipes, etc., in connection with MILCOR STEEL STUDS and the ready adaptability of these studs to framing for doors and other openings is depicted above.



PROPERTIES OF MILCOR STEEL STUDS

All Dimensions in Inches						Area Sq. Ins.	Axis x-x			Axis y-y		
A	B	C	D	E	F		I	S	r	I	S	r
2	½	⅜	2	⅜	.223	.125	.099	.099	.890	.004	.015	.184
2¼	½	½	2¼	⅜	.200	.140	.136	.121	.985	.005	.016	.183
3	½	¾	2¾	⅜	.171	.172	.283	.189	1.28	.005	.017	.177
3¼	½	¾	2¾	⅜	.171	.172	.341	.210	1.41	.005	.017	.177
4	½	¾	2	½	.171	.172	.544	.272	1.78	.005	.017	.177
6	½	¾	1½	½	.171	.172	1.46	.485	2.78	.009	.017	.177

SAFE TOTAL LOAD IN POUNDS PER LINEAR FOOT OF STUD

Simple Span. Uniform Load. Working Stress 15,000 Pounds Per Square Inch

Size in. ins.	Clear Span in Feet															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	39	27	20	15	12	9	..	..	..	..	..	..	..	..	..	..
2¼	48	33	25	19	15	12	10	8	..	..	..	..	..	..	..	..
3	75	52	38	28	23	19	15	13	11	..	..	..	..	..	..	..
3¼	84	58	43	33	26	21	17	14	12	10	..	..	..	..	..	..
4	108	75	55	42	33	27	22	19	16	14	12	10	..	..	..	..
6	..	134	98	75	59	48	40	33	28	25	21	19	16	15	13	12

The load per square foot for any spacing is equal to the tabular load x 12/spacing in inches. EXAMPLE: What is the safe load that 6 inch studs spaced 16 inches on centers, span 11 feet, will support? Tabular value is 40, therefore 40 x 12/16 equals 30 pounds per square foot.

The spacing in inches for any load is equal to the tabular load x 12/load per square foot. EXAMPLE: What spacing will be required for 4 inch studs, span 10 feet, to support 20 pounds per square foot? Tabular value is 27, therefore 27 x 12/20 equals 16.2 inches on centers. Use 16 inches.

The safe total load for any stress is equal to the tabular load x the stress/15,000. EXAMPLE: What safe load per linear foot will be supported by 4 inch studs, span 10 feet, with 18,000 pounds per square inch working stress? Tabular value is 27, therefore 27 x 18,000/15,000 equals 32.4 pounds per linear foot.

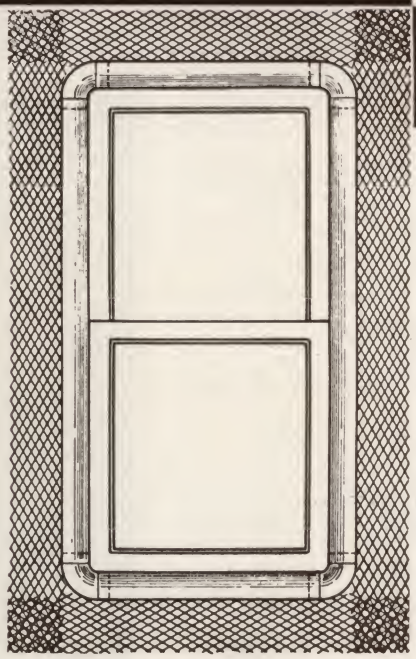
To support the tabular loads, studs must be braced laterally and securely connected to the structure.

RECOMMENDED STUD SPACING FOR VARIOUS WEIGHTS OF MILCOR METAL LATH

Type and Weight of Metal Lath	Recommended Spacing of Studs
2.5 lb. Netmesh Lath	12 inches
3.0 lb. Netmesh Lath	12 inches
3.4 lb. Netmesh Lath	16 inches
2.75 lb. Kuehn's Specialmesh or Stay-rib No. 1	16 inches
3.0 lb. Kuehn's Specialmesh or Stay-rib No. 1	20 inches
3.4 lb. Kuehn's Specialmesh or Stay-rib No. 1	20 inches
2.5 lb. ⅜" Stay-rib No. 2	16 to 20 inches
3.0 lb. ⅜" Stay-rib No. 2	24 inches
3.4 lb. ⅜" Stay-rib No. 2	28 to 32 inches
4.0 lb. ⅜" Stay-rib No. 2	32 inches

METAL WINDOW TRIM AND STOOLS

Above photograph shows application before plastering of Milcor Window Stool No. 520 used in conjunction with Window Trim No. 500 which forms jambs and head. Note particularly the function of the Expanded Metal Flange which is seamed or welded on the Stool and Trim and will eliminate any possibility of cleavage cracks at joining of plaster and trim. On the opposite page is a similar installation after the interior has been completed.



Sketch above shows No. 500 Window Stool and Fittings used as complete window Trim, with Expanded Metal Flange reinforcement on all sides.

SPECIAL

1. Milcor Metal Window Trim and Stools provide best possible construction for practically all kinds of buildings. Permanence, fire safety, and resistance to use and abuse are inherent advantages in these products because they are made entirely of heavy metal.

2. They are sanitary and economical, easy to keep clean and to maintain.

3. All types are attractive in appearance and adaptable to any installation, being particularly suited to use in public buildings, schools, hospitals, institutions, hotels, apartments, offices and industrial buildings.

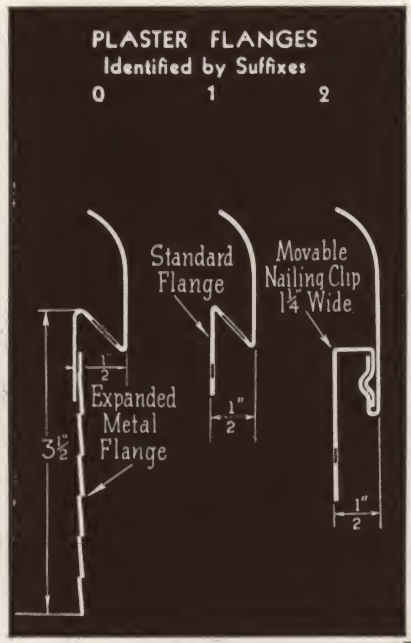
MILCOR TRIM

AVAILABLE WITH ANY OF THREE FLANGES

Most Milcor Metal Trim Products are available with any of three different types of Metal Flanges for fastening the trim to the wall.

EXPANSION WING FEATURE—Obviously the most practical of these is the Expanded Metal Flange, which in many cases is formed as an integral part spot-welded to the exposed moulding. The advantage of this expansion flange lies principally in its function as a permanent plaster bond whose network of expanded steel prevents checking and cracking of plaster at the vulnerable points.

Cross section views of the Expanded Metal Flange, Standard Flange, and movable Nailing Clip are shown in sketch at right. Any of these flanges are available on all Milcor Window Stools and flange desired should be clearly specified.



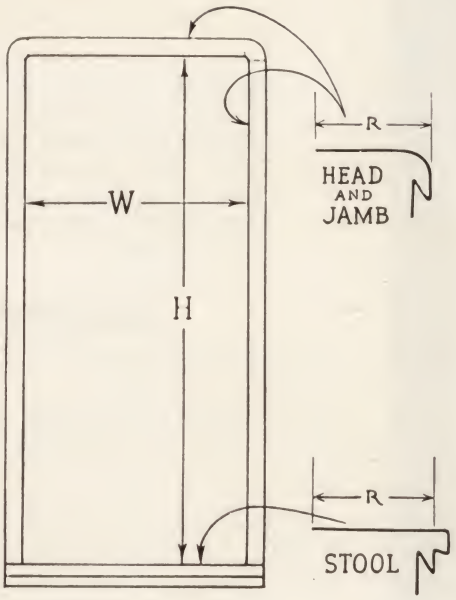
METAL WINDOW TRIM AND STOOLS

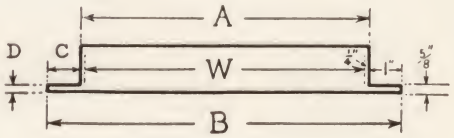
FEATURES

4. The line is COMPLETE. Every desirable type of metal window trim and stool may be found in the Milcor line and numerous different installations may be achieved by combining various designs, mouldings and bases.

5. Most Milcor Trim is available with any of three types of plaster flanges: 1. Expansion Wing; 2. Standard Flange; and 3. Movable Clip.

6. Cast iron fittings are WELDED to the stools and trim at the factory, an important, exclusive feature which makes these products unequalled in strength, appearance and ease of installation.





The simple architectural beauty which can be achieved through the use of Milcor Metal Trim is readily evident in the above photograph. It is so obviously more attractive than the old heavy wood trim that comparison is unnecessary. But even more important than its good looks are the many practical advantages which make it the ideal trim for every structure.

INSTRUCTION CHART
FOR ORDERING WINDOW TRIM

Window Stools and Trim are generally cut to the exact length desired and the proper end fittings permanently welded at the factory. Therefore, it is necessary that we be supplied with dimensions as shown in accompanying chart.

MEASUREMENTS REQUIRED FOR FLAT FACED STYLE WINDOW TRIM AND STOOL

W—Represents the width of opening between finished plastered jambs.

A—Equals width including ¼ in. allowance on each end of stool for projection into the finished plaster. This prevents any possibility of an exposed crack.

B—Represents overall exposed surface including 1 ¼ in. projection on each end of stool beyond window openings.

C—Represents standard notch. This may be varied depending on distance of projection required. Standard notching furnished unless otherwise specified.

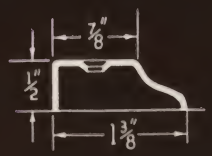
D—Represents ½ in. width of extension beyond face of finished plaster line. Additional ¼ in. furnished for inserting in plaster.

H—Represents height of window opening from face of stool to finished plaster head.

R—Represents the reveal to plaster line. This reveal must be measured from window sash to finished plaster line. ½ in. allowed for projection beyond finished plaster line.

No. 703 Window Stop

Window Stop No. 703 may be used on all Milcor and Richsto Window Stools. See dimensions in sketch.



WINDOW TRIM AND STOOLS
No. 500 SERIES

MILCOR

MILCOR

No. 500 WINDOW STOOL
1½" Radius with 500-H Fitting

MILCOR No. 500 Series Trim and Stools provide suitable construction for modern public buildings, schools, hospitals, institutions, hotels, apartments, offices and industrial buildings. The natural qualities of the metal surface provide sanitation, fire safety and attractive appearance while the Expansion Wing offers permanent protection against cracks and cleavage.

RECOMMENDED SPECIFICATION DATA

1 — IDENTIFICATION OF STOOL — Stools should be selected and specified by numbers given herein.

2 — KIND OF METAL AND GAUGE — Milcor Window Stools and Trim are made fom Tight Coat Galvanized Sheets of 20, 18, 16, 14 and 12 gauge metal. Can be made from Inland Pure Iron, Armco Ingot Iron, Toncan Iron or Copper Alloy.

3 — FINISH — Milcor Window Stools and Trim are given a priming coat at the factory and take any type of painting or decorating finish. Finishing coat should be put on after the trim is installed and the plastering is completed.

4 — FITTINGS — Fittings for Window Trim No. 500 Series are shown on page 23. Careful selection of the proper Fittings should be made. Milcor Corner Fit-

CAST FITTINGS FOR NOS. 500, 501, 502 WINDOW TRIM (See page 23, opposite)

No. 500-A All round Corner for ¾ in. Stool ith ¾ in. radius Trim.

No. 500-B All round Corner for 1½ in. tool with 1½ in. radius Trim.

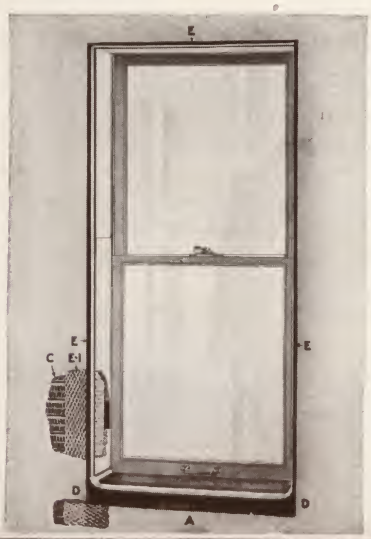
No. 500-C Left Corner for 1½ in. Stool ith ¾ in. radius Trim.

No. 500-D Right Corner for 1½ in. Stool ith ¾ in. radius Trim.

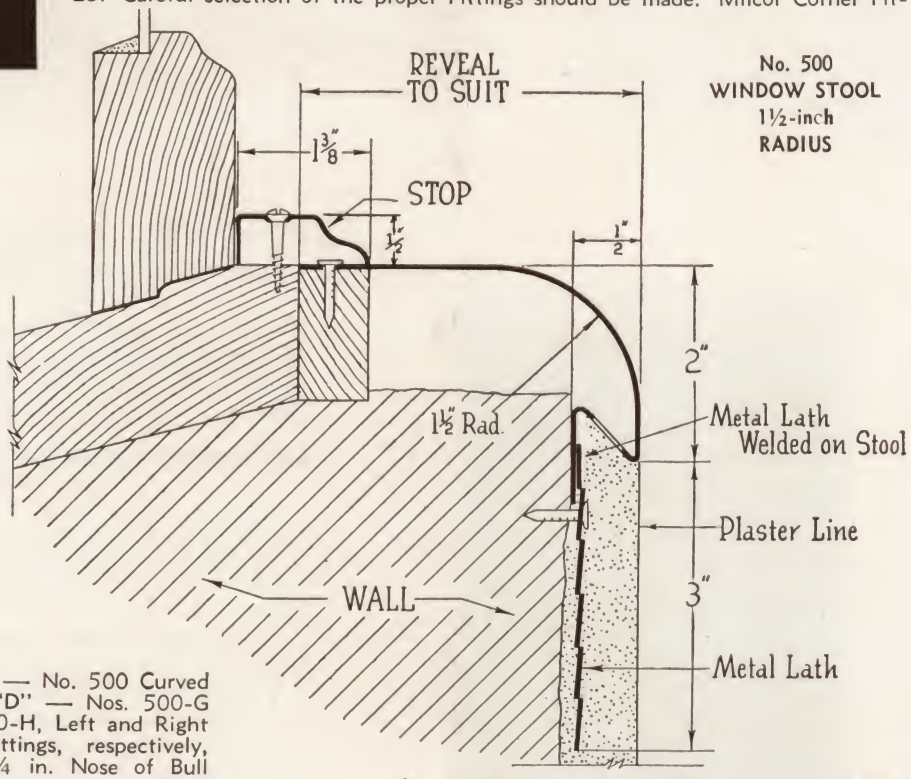
No. 500-E Left Corner for ¾ in. Stool with ¼ in. Bull Nose Bead.

No. 500-F Right Corner for ¾ in. Stool with ¼ in. Bull Nose Bead.

No. 500-G Left Corner for 1½ in. Stool ith ¾ in. Bull Nose Bead.



"A" — No. 500 Curved Stool, "D" — Nos. 500-G and 500-H, Left and Right End Fittings, respectively, "E"—¾ in. Nose of Bull Nose Expansion Corner Bead No. 10, "E-1"—Expanded Metal Wings of Bead; "C" Kuehn's Specialmesh Metal Lath in wall.



No. 500
WINDOW STOOL
1½-inch
RADIUS

It is important that explicit specifications be given regarding gauges of metal to be used. As a general rule we recommend 18 gauge metal for stools where the reveal is not wider than 4 in. and the stool is 5 ft. or less. With a greater reveal than 4 in. or where the stool is

Stamped Sheet Metal Corners Available for Window Trim Styles B, G, and H

No. 500 WITH EXPANDED METAL FLANGE
No. 501 WITH STANDARD FLANGE
No. 502 WITH MOVABLE NAILING CLIP

Curved Metal Window Trim No. 500 Series is made in two types — one with a ¾-inch radius and one with a 1 ½-inch radius. Cross section diagrams of each of these series (shown below) are made to ½-inch scale.

This Window Trim may be used as a Window Stool in connection with other Milcor Products or as complete trim for the window.

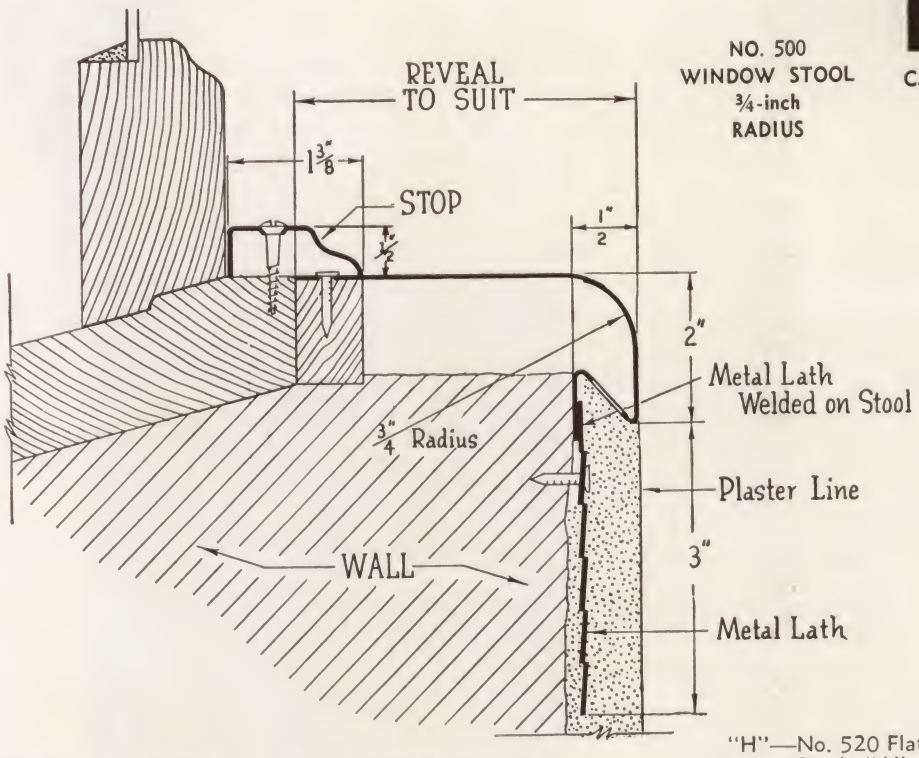
FOR ALL WINDOW TRIM AND STOOLS

tings are made from the best grades of gray cast iron, sand blasted and machined.

Corner Fittings are welded to the Trim at the factory if dimensions of windows are given when order is placed. It is sometimes desirable to ship the windows completely knocked down to be assembled on the job.

5 — GROUTING — Grouting is recommended for all Milcor Window Stools. Specifications should call for a thick grout upon which the stools are to be set.

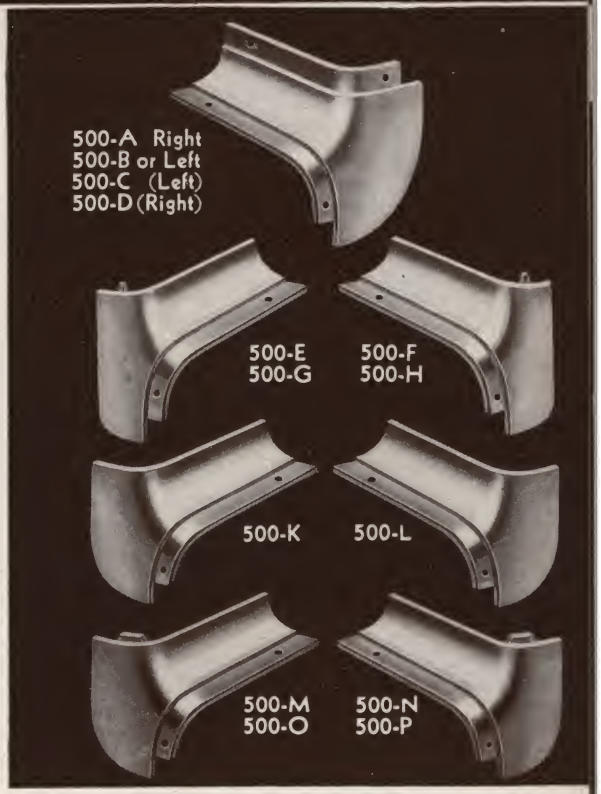
Exact dimensions should be supplied the manufacturers wherever possible, so that most of the work in preparing the Trim for installation may be taken care of at the factory.



NO. 500
WINDOW STOOL
¾-inch
RADIUS

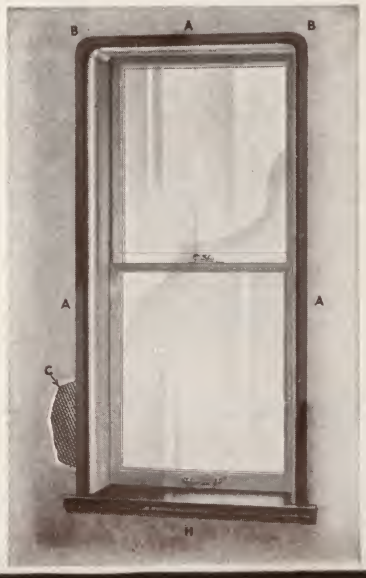
longer than 5 ft. metals of 16, 14 or 12 gauge should be specified. In public and commercial buildings it is best not to use a lighter metal than 16 gauge for stools. These stools are cut to the required length, necessary Fittings are attached, crated and shipped ready to be set in place.

"H"—No. 520 Flat Metal Window Stool; "A" — No. 500 Curved Stool used as trim; "B"—No. 500-A and B Corner Fittings; "C"—Expansion Wing attached to No. 500 Window Trim.



CAST FITTINGS FOR NOS. 500, 501, 502 WINDOW TRIM
(See page 22, opposite, for Nos. 500-A to 500-G, inc.)

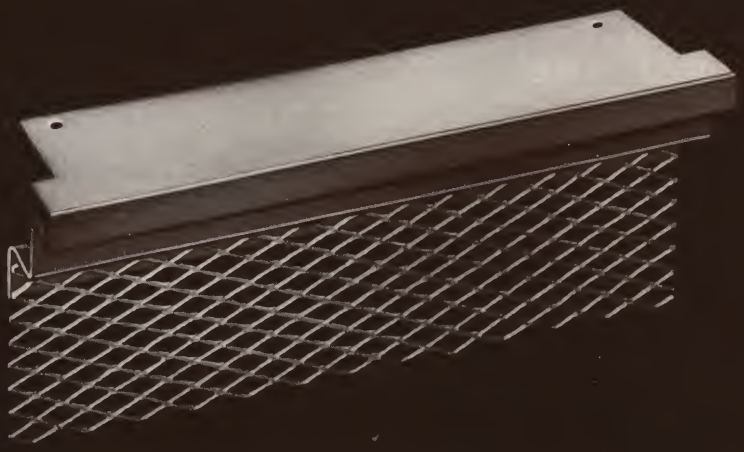
No. 500-H Right Corner for 1 ½-inch Stool with ¾-inch Bull Nose Bead.
No. 500-K Left Corner for 1 ½-inch Stool with 1 ½-inch Bull Nose Bead.
No. 500-L Right Corner for 1 ½-inch Stool with 1 ½-inch Bull Nose Bead.
No. 500-M Left Corner for ¾-inch Stool with ¾-inch Plaster Jamb.
No. 500-N Right Corner for ¾-inch Stool with ¾-inch Plaster Jamb.
No. 500-O Left Corner for 1 ½-inch Stool with 1 ½-inch Plaster Jamb.
No. 500-P Right Corner for 1 ½-inch Stool with 1 ½-inch Plaster Jamb.



No. 520 SERIES WINDOW STOOLS

No. 520 — WITH EXPANDED METAL FLANGE
No. 521 — WITH STANDARD FLANGE
No. 522 — WITH MOVABLE NAILING CLIP

MILCOR



Very often a flat Metal Window Stool is desired and the No. 520 made by Milcor, as shown here, will solve the problem admirably.

Closures for the ends (as shown below) are furnished without extra charge. Cement grouting is recommended for good construction, particularly with the Flat Metal Window Stool.

This stool has all the natural advantages of steel construction. It is pleasingly conservative in appearance and is suitable for residential use in place of wood stools.

No special Fittings are required to connect the jambs with this stool as the jambs rest on the flat surface of the stool. Milcor Bull Nose Expansion Wing Bead No. 10, or No. 1 mitered to fit, make the most desirable jamb. This Window Stool may be pleasingly applied with Metal Window Trim No. 500 Series as described on Page 22.

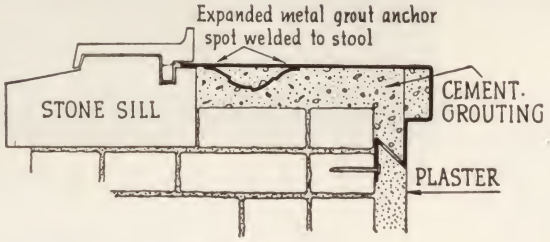


Diagram which shows expanded metal grout anchors spot welded to stool. (Furnished at slight additional cost.)

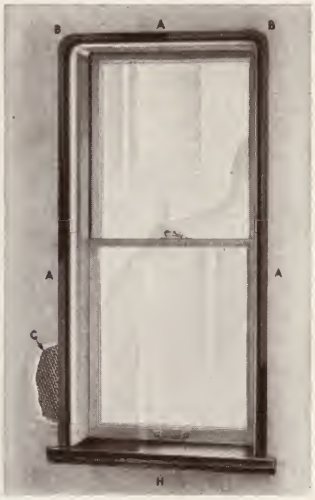


Illustration shows No. 520 Flat Metal Window Stool used with No. 500 Trim (see page 22) "A"—No. 500 Curved Stool used as trim; "B"—No. 500-A and B Corner Fittings; "H"—No. 520 Flat Metal Window Stool; "C"—Expansion Wing attached to No. 500 Window Trim.

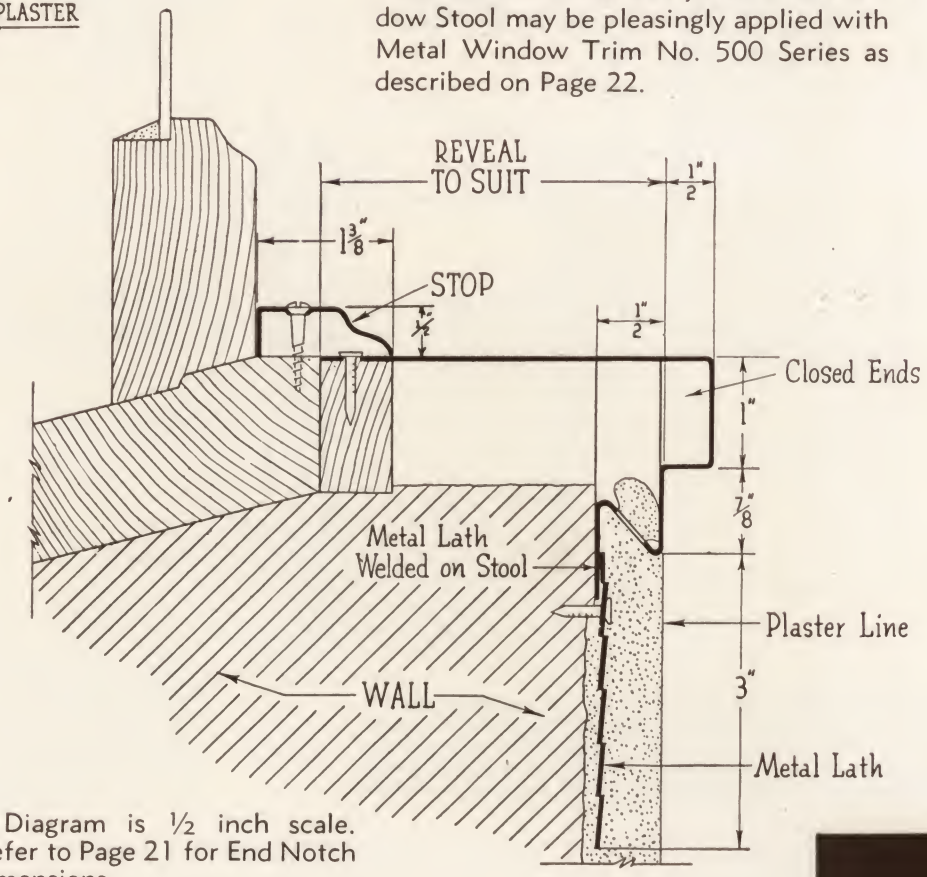


Diagram is ½ inch scale. Refer to Page 21 for End Notch dimensions.

MILCOR METAL BASES

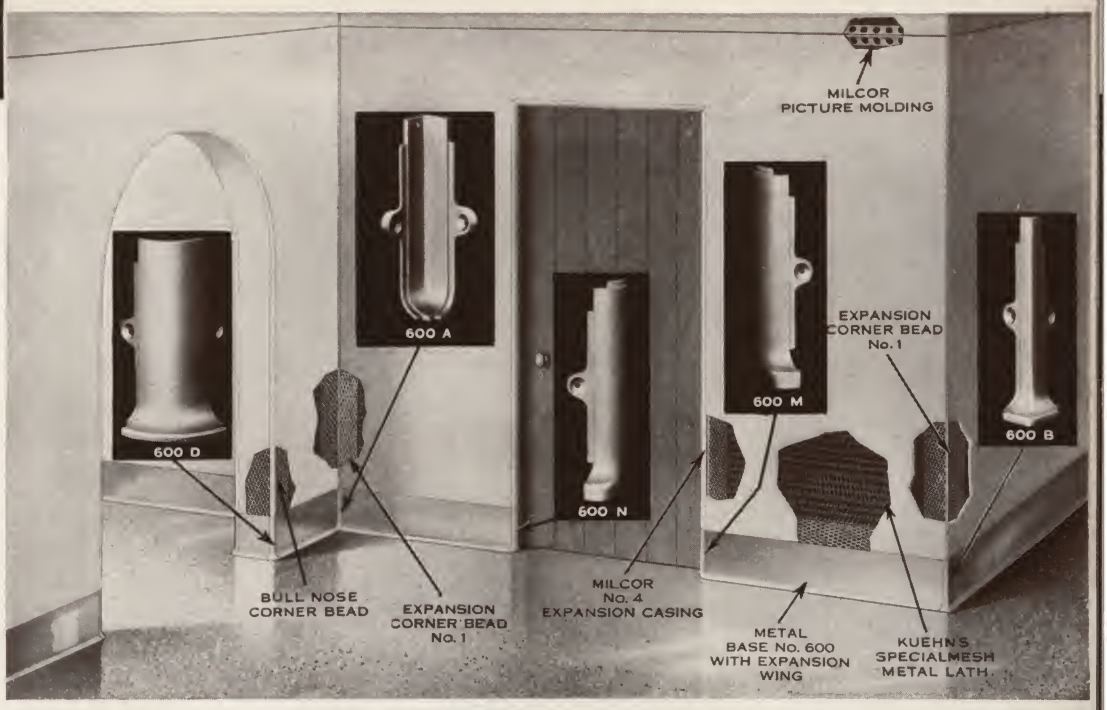
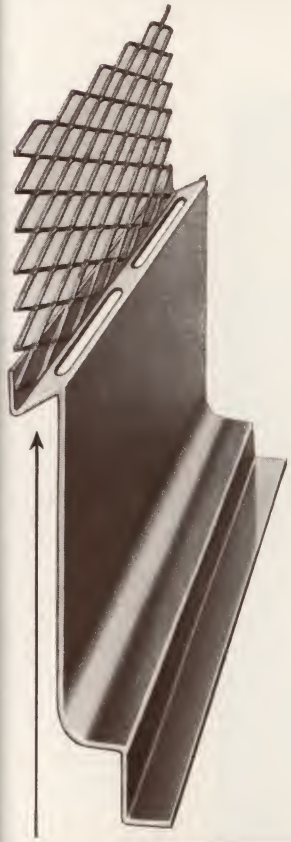
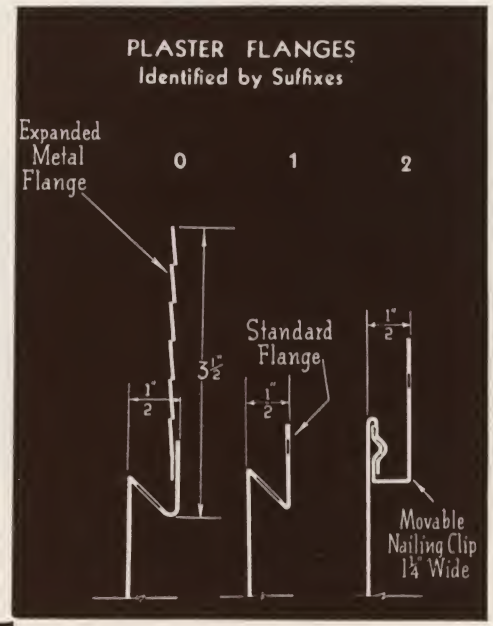


Illustration shows typical installation of Milcor Fireproof Materials with particular reference to the use of Milcor Metal Base. Corner and End Fittings perfectly match the contour of Milcor Expansion Corner Bead, No. 1; Bull Nose Corner Bead, and Casing. Complete Fittings for No. 600 Metal Base illustrated above are given on page 27.



MILCOR METAL BASES AVAILABLE WITH ANY OF THREE PLASTER FLANGES

NOTE PERFORATIONS TO PERMIT ENTRY OF FILL



GENERAL SPECIFICATION DATA FOR ALL BASES

1—PLAN SHOWING LOCATION—A plan showing just where metal bases are to be used is recommended.

2—IDENTIFICATION OF BASE—Base should be selected and specified by numbers as given in this catalog.

3—KIND OF METAL AND GAUGE—Milcor Bases are made from Tight Coat Galvanized Sheets of 18 and 20 gauge metal.

4—FINISH—Milcor Bases are given a priming coat at the factory and take any type of painting or decorating finish. Finish coat should be put on after base is in place and the plastering is completed.

5—FITTINGS—Milcor Corner Fittings for right angles both inside or outside, as well as terminating points of base part, are furnished as illustrated in this catalog. Special angles should be taken care of by mitering or coping. Special fittings for odd usages or unusual corners may be furnished if a sufficient number is required to justify patterns. As a rule, however, special angle corners on any job may be made by a skilled workman when the base is being installed.

6—GROUTING—Grouting is recommended for all Milcor Flush-with-Plaster type Bases. Specifications should call for a cement grout to be poured in through the slots after the base is placed.

7—INSTALLATION—The base should be installed with the use of special tools rented from the manufacturer, for punching and sawing.

No. 600 SERIES METAL BASES

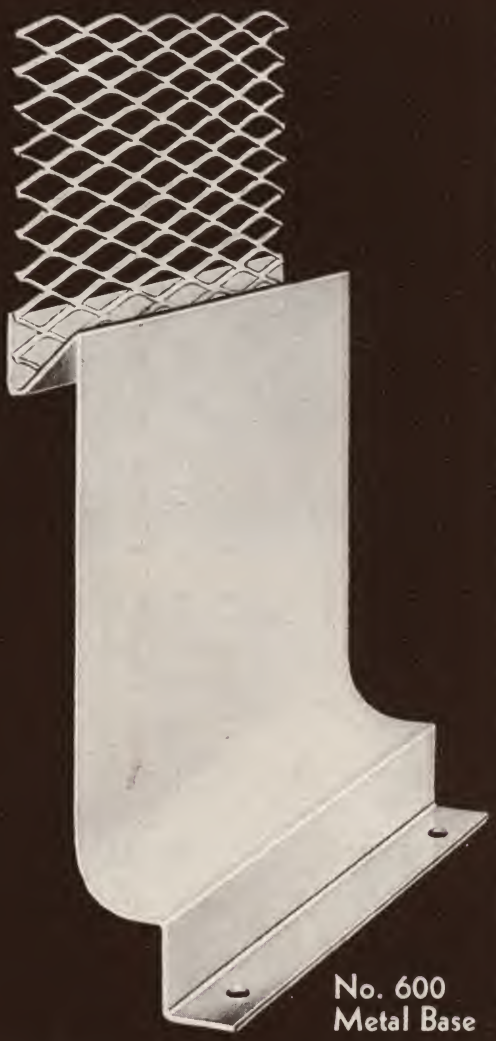
No. 600 — WITH EXPANDED METAL FLANGE
No. 601 — WITH STANDARD FLANGE
No. 602 — WITH MOVABLE NAILING CLIP

MILCOR

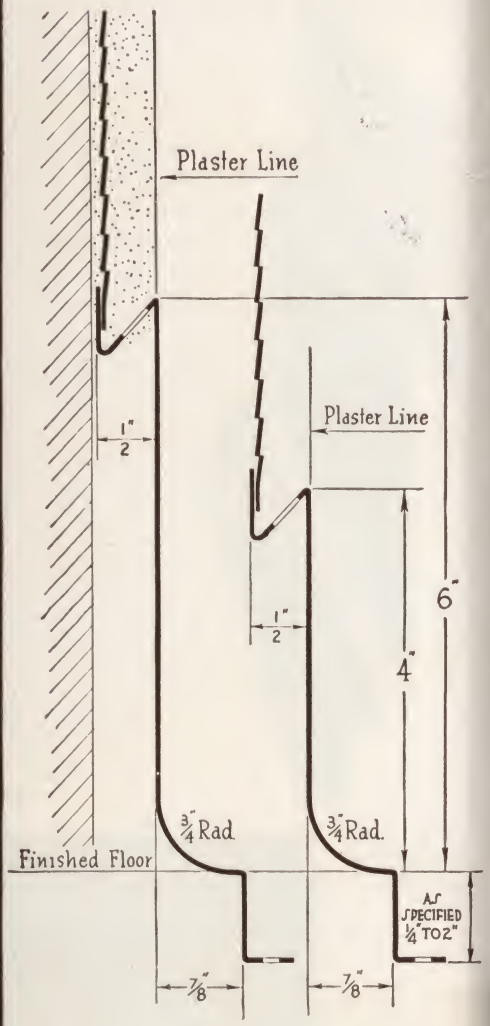
SEE PAGE 25 FOR EXPLANATION OF FLANGES

With Outside Corner No. 600-D

With Inside Corner No. 600-C



No. 600 Metal Base



NO. 600 METAL BASE, WITH EXPANDED METAL FLANGE (ILLUSTRATED)

Illustrations of No. 600 Metal Base show the Expanded Metal Flange as it is attached to the base. This flush-with-plaster type base is practical for the majority of installations.

Milcor Metal Bases with Expanded Metal Flange provide a permanent bond which eliminates any possibility of cleavage cracks at the joining of plaster and base. In addition to its grip on the plaster, the Expanded Metal Flange is attached firmly to the wall and assures positive plaster reinforcement and the greatest known assurance against plaster cracks.

The No. 600 Series, like all Milcor Bases, is furnished in 4-inch and 6-inch heights.

See general specification data on page 25.

Nos. 601 and 611 METAL BASES
(IN 600 and 610 SERIES)

See general specification data on page 25.

The Metal Bases shown below are included in the 600 and 610 groups but numbered 601 and 611 because they have the standard flange. No. 602 has exactly the same contour but utilizes the movable nailing clip for attaching to the wall. (See page 25.)

The 610 Series is identical with the 600 Series except that the lower flange is attached to the wall instead of to the floor. Bases in this series are as follows:

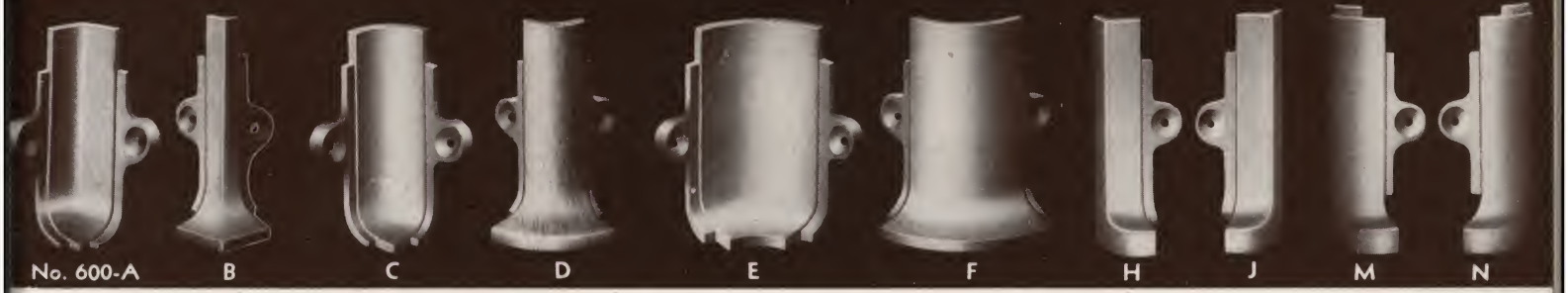
No. 610 With Expanded Metal Flange
No. 611 With Standard Flange, (illustrated)
No. 612 With Movable Nailing Clip

No. 611
Metal Base

With Outside Corner No. 600-D

With Inside Corner No. 600-C

No. 601
Metal Base



FOUR AND SIX-INCH FITTINGS FOR NOS. 600 AND 610 SERIES

Double Lugs Furnished on Six-Inch Fittings

No. 600-A Square. Inside cast iron corner.
No. 600-B Square. Outside cast iron corner.
No. 600-C ¾-inch radius. Inside cast iron corner.
No. 600-D ¾-inch radius. Outside cast iron corner.
No. 600-E 1 ½-inch radius. Inside cast iron corner.
No. 600-F 1 ½-inch radius. Outside cast iron corner.
No. 600-H Right end. End stop cast iron.
No. 600-J Left end. End stop cast iron.
No. 600-M Right side. Plinth cast iron for No. 4 casing.
No. 600-N Left side. Plinth cast iron for No. 4 casing.

No. 620 PROJECTING TYPE METAL BASES

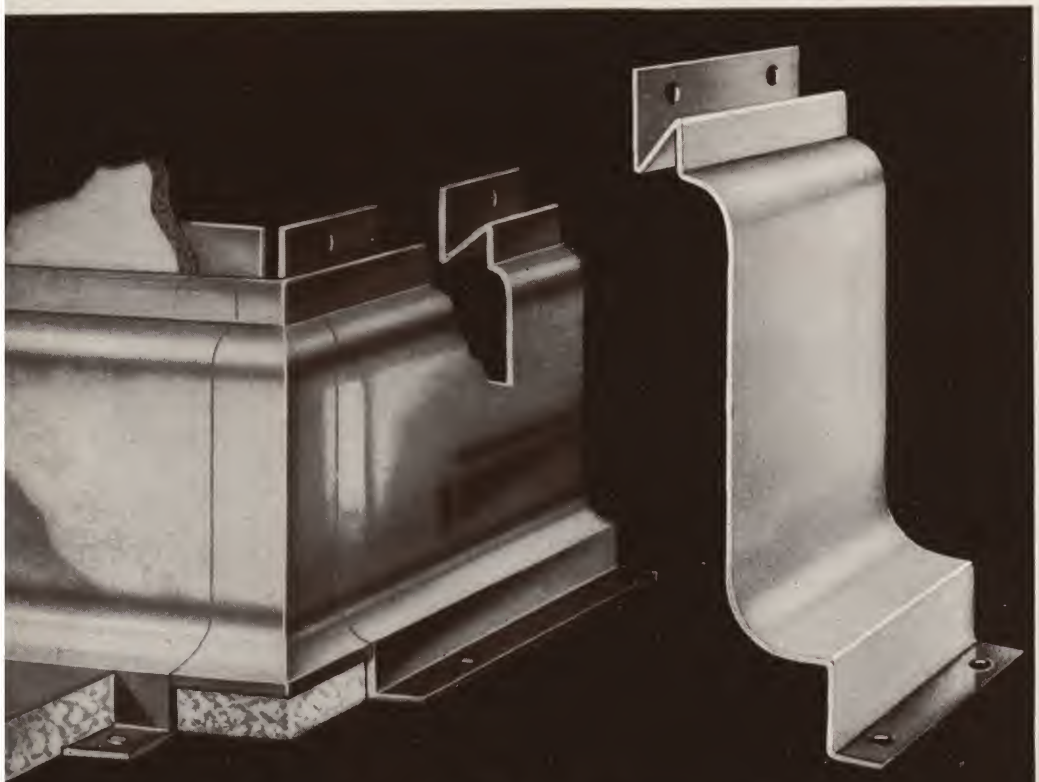
See General Specification Data on page 25

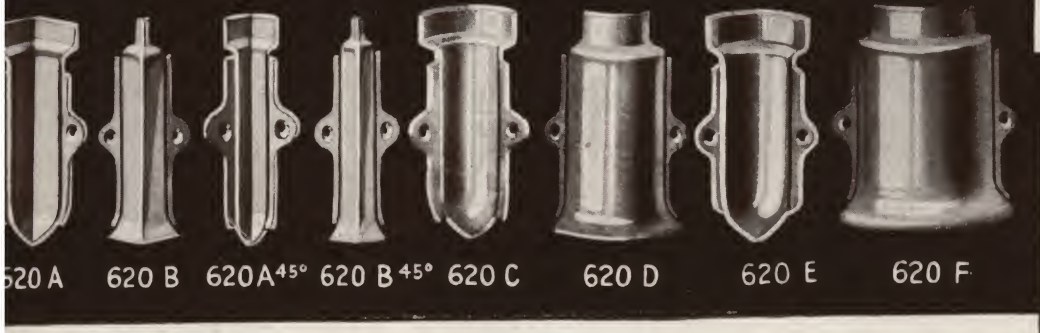
No. 620 — WITH EXPANDED METAL FLANGE
No. 621 — WITH STANDARD FLANGE (ILLUSTRATED)
No. 622 — WITH MOVABLE NAILING CLIP

MILCOR

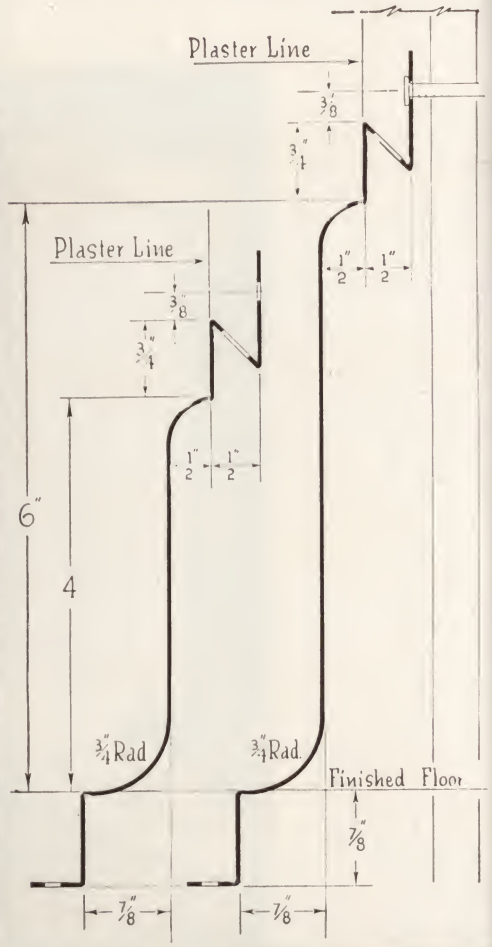
The No. 620 Style of Base Design appeals to many architects and designers because the projection of the base out from the plaster line gives an additional trim effect to the room. The old wood base had to be installed in front of the plaster line and many persons are used to and prefer this appearance.

The No. 620 design is just as practical as other flush-with-plaster type metal bases. Diagram shows dimensions of both 4-inch and 6-inch styles drawn to ½-inch scale.





620 A 620 B 620 A45° 620 B45° 620 C 620 D 620 E 620 F



620 H 620 J 620 M 620 N

FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 620 SERIES

Double Lugs Furnished on Six-Inch Fittings

No. 620-A Square. Inside cast iron corner.

No. 620-B Square. Outside cast iron corner.

No. 620-A 45°. Inside corner, 45° angle.

No. 620-B 45°. Outside corner, 45° angle.

No. 620-C ¾-inch radius. Inside cast iron corner.

No. 620-D ¾-inch radius. Outside cast iron corner.

No. 620-E 1½-inch radius. Inside cast iron corner.

No. 620-F 1½-inch radius. Outside cast iron corner.

No. 620-H Right End. End stop cast iron.

No. 620-J Left End. End stop cast iron.

No. 620-M Right Side. Plinth, cast iron, for No. 138 or No. 141 Casing.

No. 620-N Left Side. Plinth, cast iron, for No. 138 or No. 141 Casing.

No. 630 ADJUSTABLE FLUSH TYPE METAL BASES

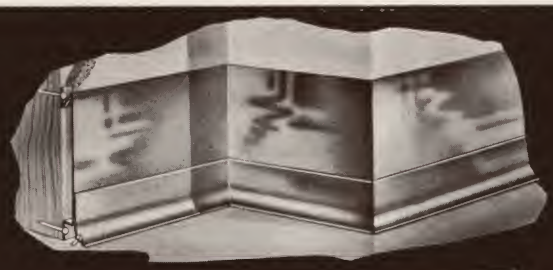
No. 630 — WITH EXPANDED METAL FLANGE
No. 631 — WITH STANDARD FLANGE (ILLUSTRATED)
No. 632 — WITH MOVABLE NAILING CLIP

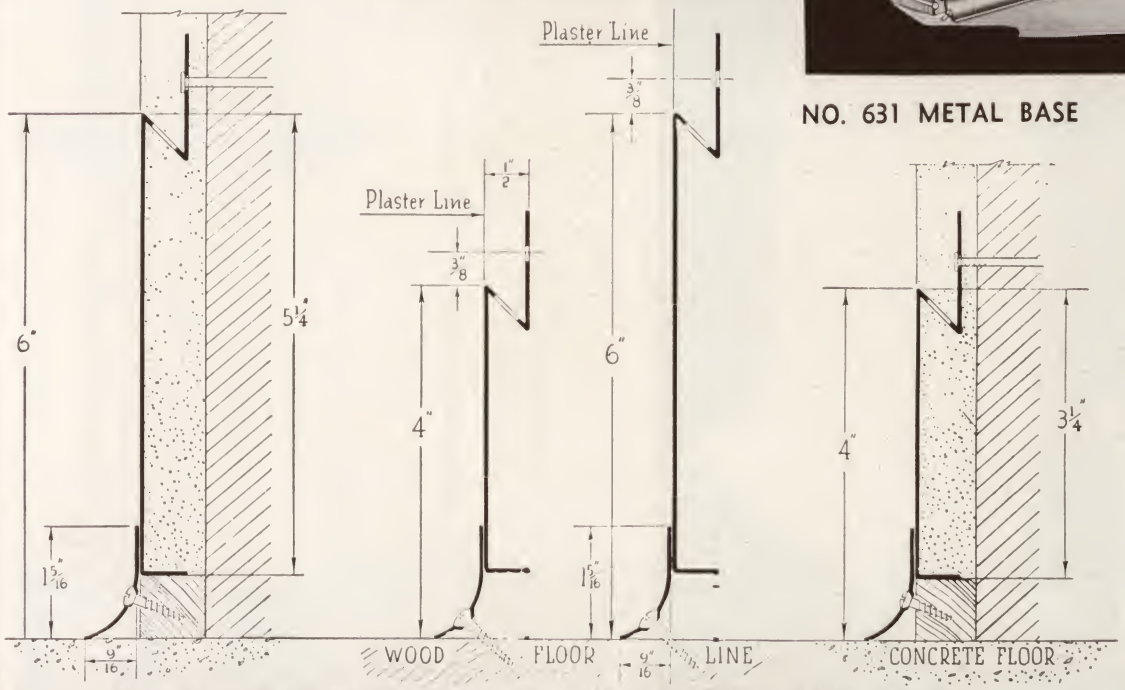
Bases in the 630 Series are especially suitable for wood or linoleum floors. The bases are of the flush type and are provided with an adjustable bottom cove mould. The lower part of the base is erected after plastering and after the floor is laid, by the use of wood screws as shown in detail below. Necessary 1-inch No. 5 oval head wood screws are furnished for the cove of this base.

Specify whether base is to be used for cement or wood floor, so proper lower cove will be furnished.

Note different construction in diagrams.

Lower Cove for Bases in No. 630 Series is installed after wall and floor are finished.





Note Method of Attaching Lower Cove Mould for Different Floor Conditions.

NO. 631 METAL BASE

630 A 630 B 630 A45° 630 B45° 630 C 630 D 630 E 630 F 630 H 630 J

FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 630 SERIES

Double Lugs Furnished on Six-Inch Fittings

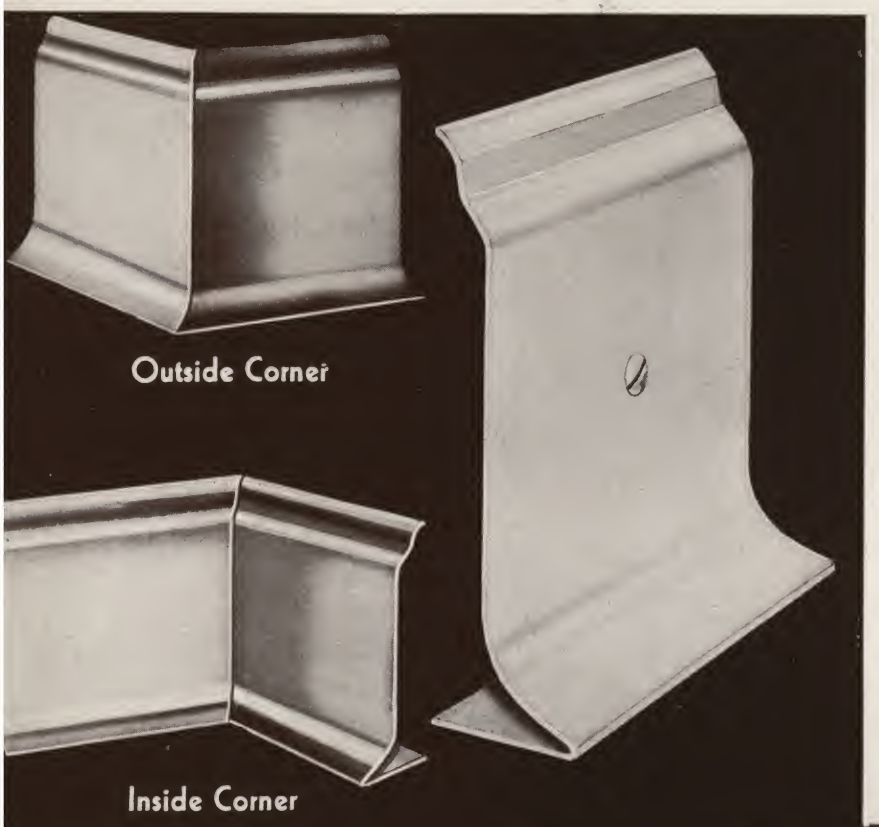
No. 630-A Square. Inside cast iron corner.
No. 630-A 45°. Inside corner, 45° angle.
No. 630-B Square. Outside cast iron corner.
No. 630-B 45°. Outside corner, 45° angle.
No. 630-C ¾-inch radius. Inside cast iron corner.
No. 630-D ¾-inch radius. Outside cast iron corner.
No. 630-E 1 ½-inch radius. Inside cast iron corner.
No. 630-F 1 ½-inch radius. Outside cast iron corner.
No. 630-H Left End. End stop cast iron.
No. 630-J Right End. End stop cast iron.

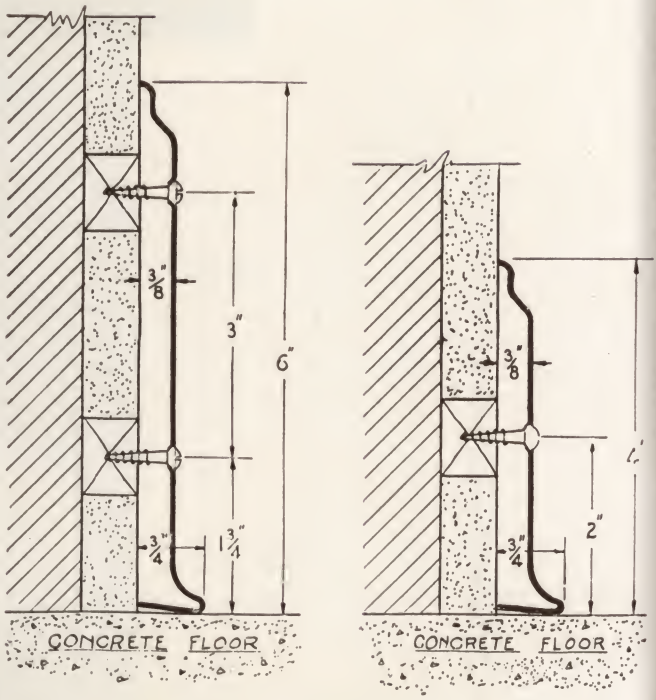
No. 644 REMOVABLE METAL BASE

MILCOR

The Milcor Removable Base No. 644 may be used with equal success in new or old buildings. The application of these bases is comparatively simple and their use enhances the appearance of any interior. They are a very important factor in modernizing or dressing up an old building.

This type of metal base is economically installed because it may be applied after the plastered wall and the flooring have been completed. One or two wooden plaster grounds in the wall, as required according to the size of the base used, are necessary for attaching. The design of the base itself makes a furring strip unnecessary. The bottom flange holds the base in proper position from the wall.





FOUR AND SIX-INCH FITTINGS FOR REMOVABLE METAL BASE NO. 644

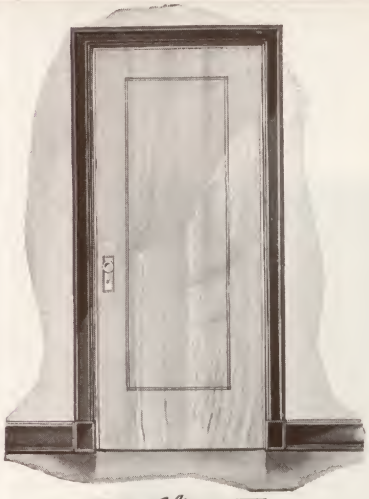
No. 644-A Square. Inside cast iron corner.
No. 644-B Square. Outside cast iron corner.
No. 644-C ¾-inch radius. Inside cast iron corner.
No. 644-D ¾-inch radius. Outside cast iron corner.
No. 644-E 1½-inch radius. Inside cast iron corner.
No. 644-F 1½-inch radius. Outside cast iron corner.
No. 644-H Left Side. End stop cast iron.
No. 644-J Right Side. End stop cast iron.
No. 644-M Right Side. Plinth, cast iron, for No. 4 Casing.
No. 644-N Left Side. Plinth, cast iron for No. 4 Casing.

No. 645 METAL BASE AND CASING

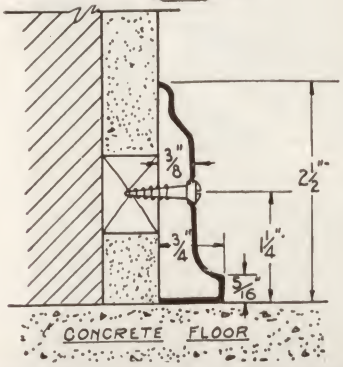
The No. 645 Metal Base is furnished in three sizes as illustrated in cross section diagrams: 2½-inch, 4-inch and 6-inch.

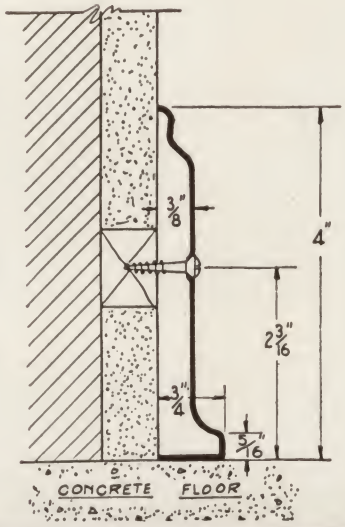
These Bases are designed for use with concrete floors. They may also be used as door casings, as indicated in the illustration to the left. The design is dignified, artistic and economical, and the combination of Metal Base and Door Casing as shown, has met with considerable favor among architects and contractors.

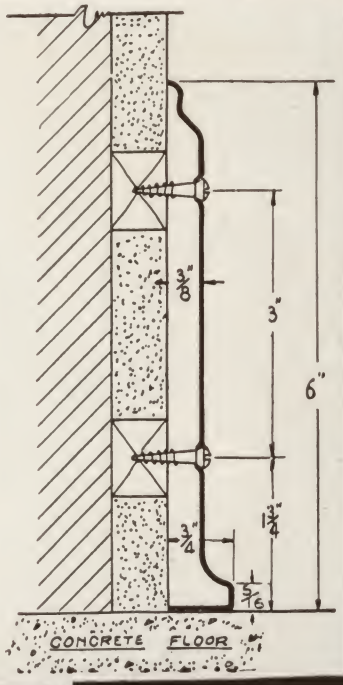
No. 5 1-inch Oval Head Wood Screws are furnished for fastening metal base to wood grounds. Holes for attaching base to grounds are punched at the factory but holes for attaching fittings are punched on the job.

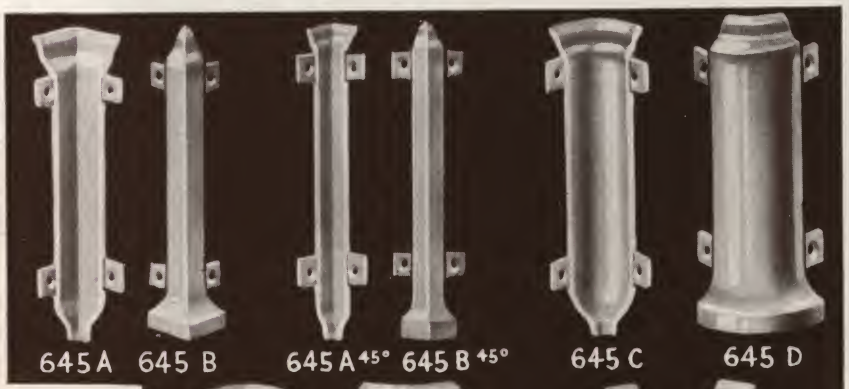


Fittings are furnished for 4-inch and 6-inch sizes but there are no fittings for 2½-inch size, which is mitered on the job.









FOUR-INCH AND SIX-INCH FITTINGS FOR NO. 645

No. 645-A Square. Inside cast iron corner.
No. 645-B Square. Outside cast iron corner.
No. 645-A 45°. Inside corner, 45° angle.
No. 645-B 45°. Outside corner, 45° angle.
No. 645-C ¾-inch radius. Inside cast iron corner.
No. 645-D ¾-inch radius. Outside cast iron corner.
No. 645-E 1½-inch radius. Inside cast iron corner.
No. 645-F 1½-inch radius. Outside cast iron corner.
No. 645-H Right End. End stop cast iron.
No. 645-J Left End. End Stop cast iron.

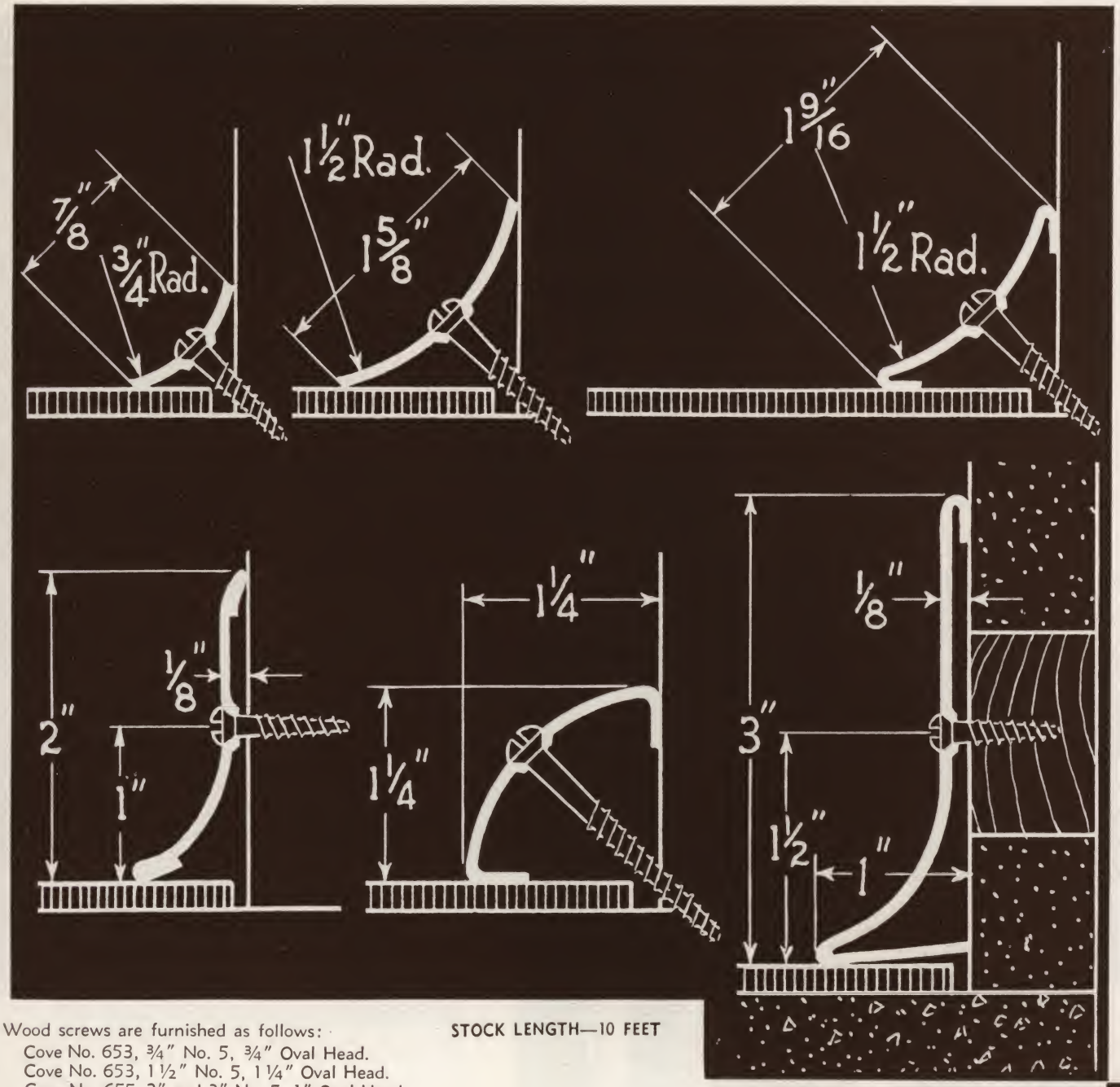
METAL COVE MOULDS

MILCOR

Many uses will be found for these types of Coves and Moulds. All of them are removable, quickly installed and moderate in cost. Frequently they are used in connection with wooden base already installed. They are especially adapted for use with wood floors but are equally well suited to be used over linoleum or carpet.

Cove No. 653, with both ¾-inch and 1½-inch radius, are furnished in 20 gauge steel with gray priming coat. Coves No. 654, 655, in both 2 and 3-inch sizes, and Nos. 657 and 656 are furnished in 24 gauge steel. All coves and Moulds are also made in brass, aluminum and stainless steel, on order.

Fittings are furnished for Cove Moulds Nos. 654 and 655. Other Coves are mitered on the job.



Wood screws are furnished as follows:
Cove No. 653, ¾" No. 5, ¾" Oval Head.
Cove No. 653, 1½" No. 5, 1¼" Oval Head.
Cove No. 655, 2" and 3" No. 5, 1" Oval Head.
Cove No. 657, No. 5, 1" Oval Head.
Coves Nos. 654 and 656—No. 5, 1¼" Oval Head.

STOCK LENGTH—10 FEET

DIAGRAMS ACTUAL SIZE

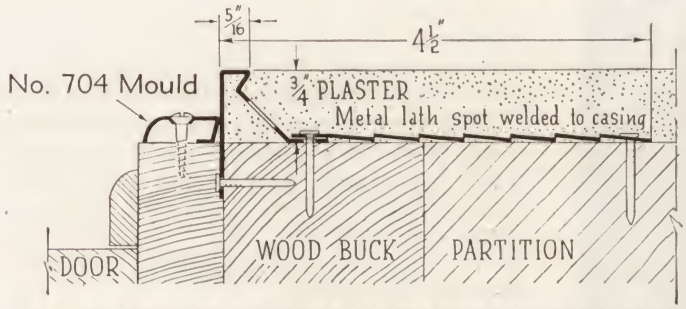
CORNER GROUNDS AND SPECIAL MOULDS

CORNER GROUNDS NO. 65 WITH AND WITHOUT EXPANSION WING

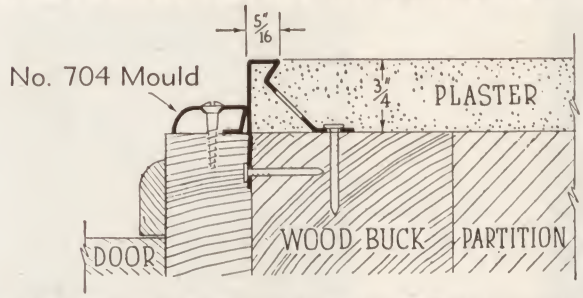
Diagrams give dimensions and show application of the No. 65 Corner Grounds, both with and without Expansion Wing attached. These Grounds are often used in connection with the Casing Moulds illustrated below.

Made from 26 and 24 gauge steel in standard lengths of 6, 7, 7½, 8, 9, 10 and 12 feet.

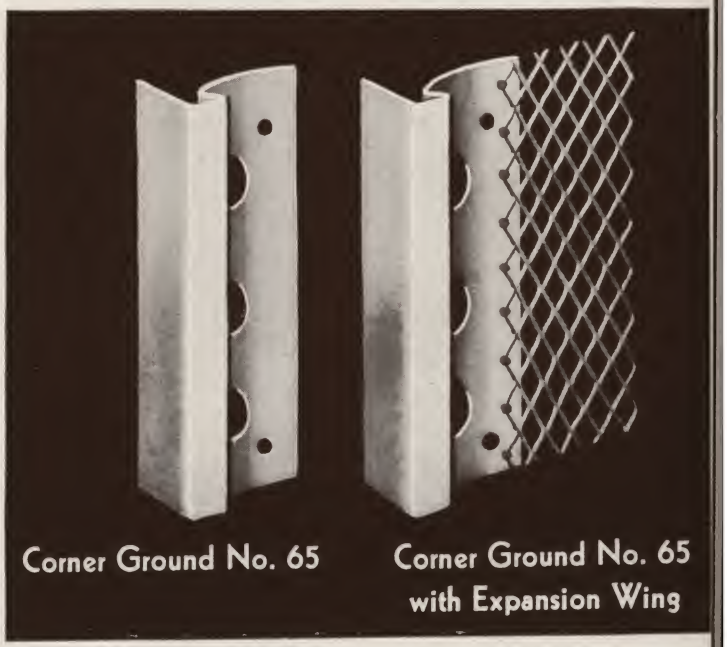
These Corner Grounds are sanitary, easily installed and low priced, and are frequently used in apartment buildings, office buildings, hotels, schools and public buildings.



No. 65 CORNER GROUND WITH EXPANSION WING

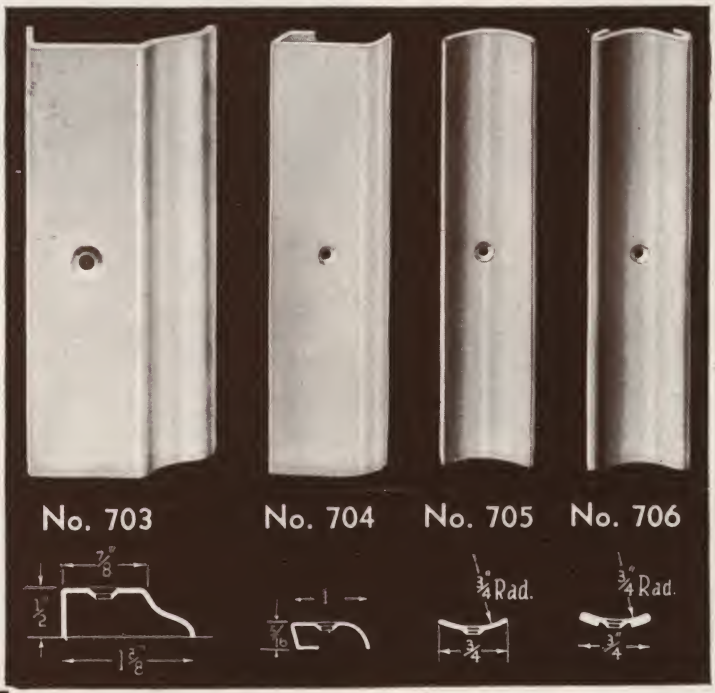


No. 65 CORNER GROUND WITHOUT EXPANSION WING



Corner Ground No. 65

Corner Ground No. 65 with Expansion Wing



SCREW HOLES SPACED 11 INCHES ON CENTERS IN ALL MOULDS.
STANDARD LENGTHS: 6, 7, 7½, 8, 9, 10 AND 12 FEET.

SPECIAL MOULDS FOR CASINGS, WINDOW STOOLS, ETC.

The merit of these Moulds lies in the fact that they are a separate unit from the Casing and consequently building vibration is broken up and sudden jars from slamming of doors are not transmitted to the plaster.

Architects will find many applications for these moulds in connection with metal casings to make a more finished installation.

MOULD SPECIFICATIONS

No. 703 Mould for Casings and Window Trim, 20 ga. steel, gray primed, 1⅜ inch wide—No. 5, 1-inch Oval Head Wood Screws furnished.

No. 704 Casing Mould (may be used as alternative for No. 706 Mould), 24 ga. steel, gray primed, ⅞ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

No. 705 Casing Mould, 20 ga. steel, gray primed, ¾ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

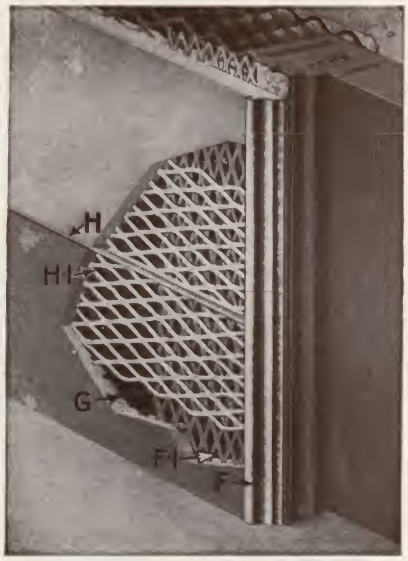
No. 706 Casing Mould (generally used with Casings Nos. 136, 137, 138 and 141), 24 ga. steel, gray primed, ¾ inch wide—No. 5, ¾ inch Oval Head Wood Screws furnished.

MILCOR EXPANSION CASINGS...

MILCOR

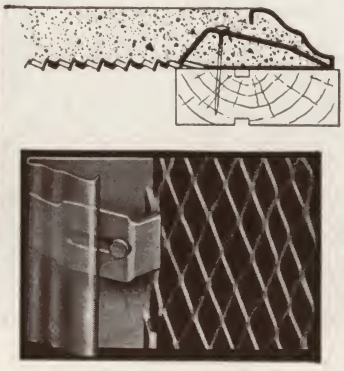
Milcor Expansion Door and Window Casings add a pleasing note of simplicity quite in line with modern trends. The lasting beauty and the practical, durable and firesafe advantages of these materials have for years made them the first choice of many architects and contractors.

The distinctive feature of Milcor Expansion Casings is the expanded metal wing which provides a secure bond and key for the plaster around doors and windows and other wall openings. Casings Nos. 4, 6, 8 and 9 have the expanded metal wing as an integral part of the nose of the casing.



MITER CORNERS AND CLIPS FOR CASINGS

One-piece Miters for Expansion Casings No. 4, No. 6 and No. 9 for miter-joint reinforcement. Slip inside the casing. Stamped in one piece from galvanized sheet steel. Weight 80 lbs. per M.



CASING CLIP NO. 2
The phantom view above shows Milcor Expansion Casing Clip No. 2 which can be used with all Milcor Casings and permits the nail to be placed where desired.

CASING CLIP No. 1

EXPANSION CASING PATENT LOCKING CLIP

The Milcor Casing Clip locks Casings firmly to the jamb. Casings are punched with $\frac{7}{16}$-inch round holes, 3 in. on center. Round-head ¾-in. No. 10 or No. 12 screws are driven into the wood jamb customarily 12 in. apart to coincide with casing punchings with heads projecting ⅛ in. The casing is slipped over the screw heads properly aligned and nailed to the buck. Clips are then slipped between the screw head and casing and driven home.

Clips stamped in one piece from galvanized sheet steel. Weight, 15 lbs. per M. Packed in cartons.

MILCOR CASINGS

NO. 4 QUARTER ROUND
NO. 6 OGEE
NO. 8 OGEE
NO. 9 SPECIAL QUARTER ROUND
NOS. 60 AND 66 SQUARE

The flush type junction of wall and casing not only insures a sanitary finish, easy to clean, with no cracks to become clogged with dirt, but also provides an air tight feature that eliminates the possibility of cold air coming into the room. There can be no warping or shrinking such as often occurs when wood casings are used.

No. 4

No. 6

No. 8

No. 9

No. 66

No. 60

No. 66

No. 60

SPECIFICATION DATA

DESIGNS:

Made in six designs—No. 4 Quarter Round; No. 6—O. G.; No. 8—O. G.; No. 9, Special Quarter Round, and Styles Nos. 60 and 66, as shown in cross sections above.

Styles Nos. 60 and 66 are also made without Expansion Wings in both 20 and 24 gauge metals, with ½, ⅝ and ¾-inch grounds.

MATERIALS

Sheet Steel Galvanized—Nos. 4, 6, 8 and 9 cut from 24-gauge sheets. Nos. 60 and 66 cut from 20 and 24-gauge sheets.

Inland Pure Iron, Armco Ingot or Toncan Iron Galvanized—Cut from 24-gauge sheets.

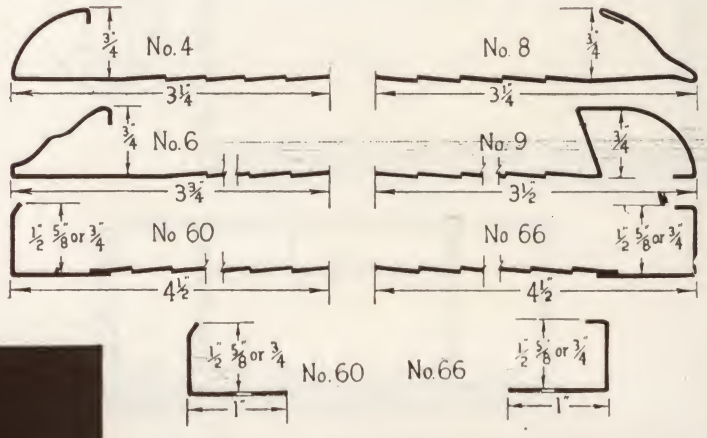
Pure Zinc—Cut from No. 11 sheets.

Cold Rolled Copper—Cut from 16-oz. sheets.

LENGTHS AND WEIGHTS

7, 7½, 8, 9, 10 and 12 ft. long. Weight of designs No. 4, Quarter Round, No. 6—O. G.; No. 8—O. G.; and No. 9, Special Quarter Round—200 lbs. per 500 lin. ft. crated.

WEIGHTS OF STYLES	LBS. PER 1000 LINEAL FEET	
	24-Gauge	20-Gauge
No. 60 (with Expansion Wings)	310	400
No. 66 (with Expansion Wings)	310	400
No. 60 (without Expansion Wings)	190	280
No. 66 (without Expansion Wings)	190	280



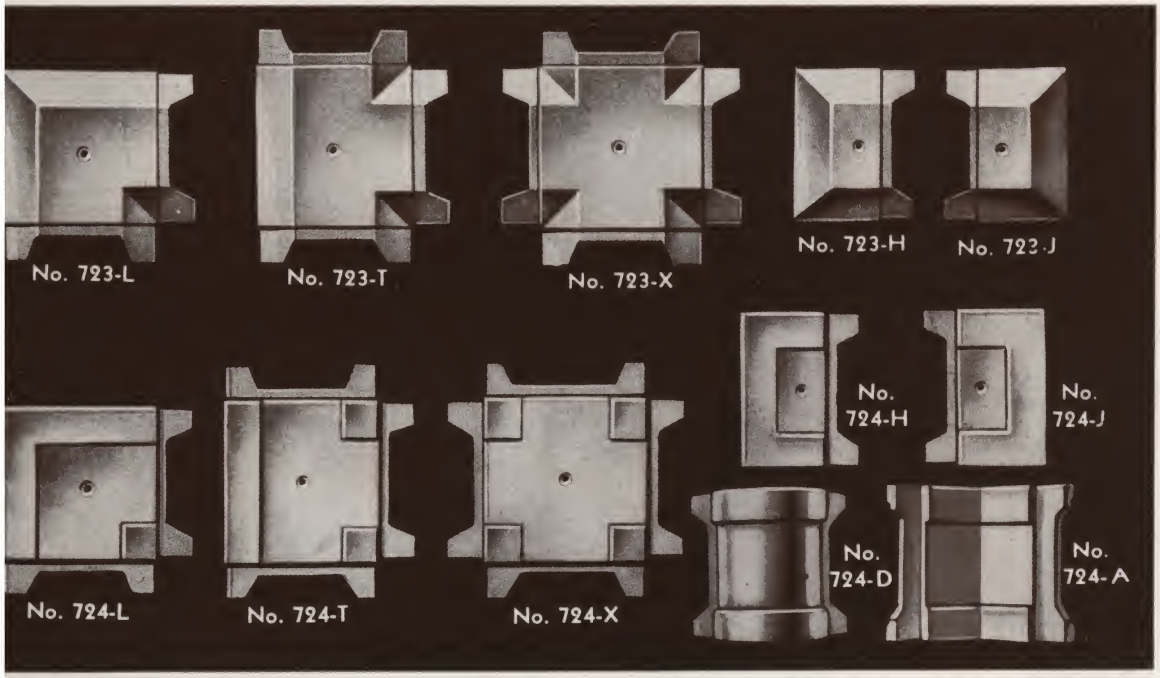
METAL BLACKBOARD MOULDS NOS. 723 AND 724

MILCOR

The two types of Blackboard Mould illustrated here will be found equally satisfactory. Almost any blackboard design can be made with these Moulds and the Fittings which accompany them. Chart below shows number of practical blackboard designs.

Made from 20 gauge steel, gray primed, and furnished in 10 foot lengths. Wood Screws furnished as follows:

For No. 723 Mould, No. 5, 1-inch Oval Head Screws
For No. 724 Mould, No. 8, ¾-inch Round Head Screws

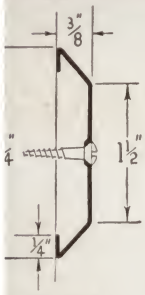


FITTINGS FOR No. 723 BLACKBOARD MOULD

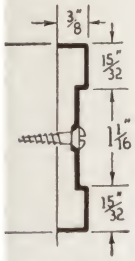
No. 723-L Corner Fitting.
No. 723-T "T" Fitting.
No. 723-X Cross Fitting.
No. 723-H Right End Stop.
No. 723-J Left End Stop.

FITTINGS FOR NO. 724 BLACKBOARD MOULD

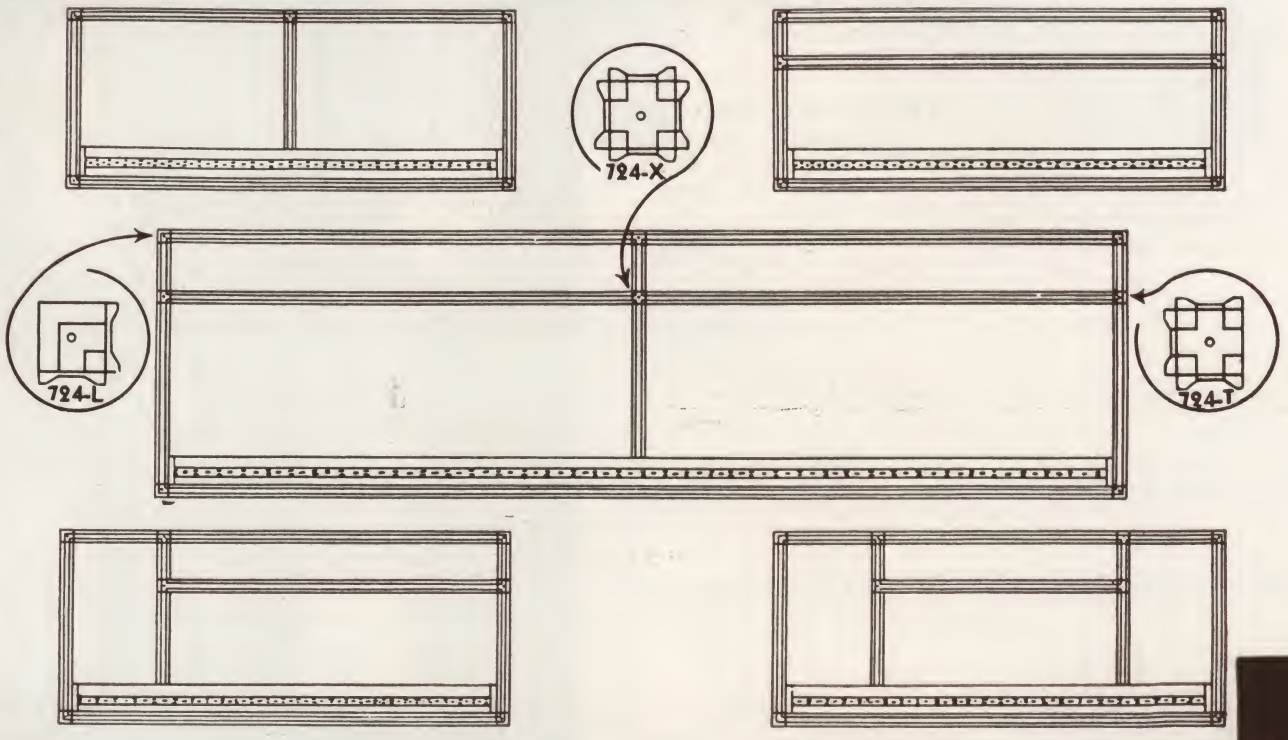
No. 724-L Corner Fitting.
No. 724-T "T" Fitting.
No. 724-X Cross Fitting.
No. 724-H Right End Stop.
No. 724-J Left End Stop.
No. 724-D Outside Corner, ¾ round.
No. 724-A Inside Corner, Square.



PROFILE No. 723 MOULD

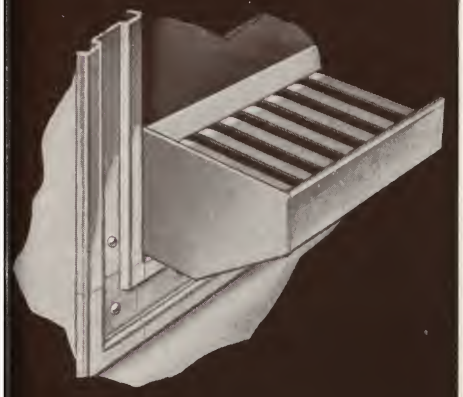


PROFILE No. 724 MOULD



METAL CHALK TROUGHS NOS. 735 AND 734

No. 735 CHALK TROUGH



The two styles of Chalk Troughs, Nos. 735 and 734, are equally practical. A selection of one or the other depends upon the appearance desired. They are interchangeable with Blackboard Moulds Nos. 723 and 724 shown on page 36.

Made from 24 gauge steel, gray primed, and furnished in 6, 8 and 10 foot lengths. No. 5, ¾-inch Oval Head Wood Screws furnished for attaching upper flange to wood grounds.

Right and Left End Stops are attached with machine screws.

FITTINGS FOR NO. 734 CHALK TROUGH

No. 734-H. Right End Stop.
No. 734-J. Left End Stop.

FITTINGS FOR NO. 735 CHALK TROUGH

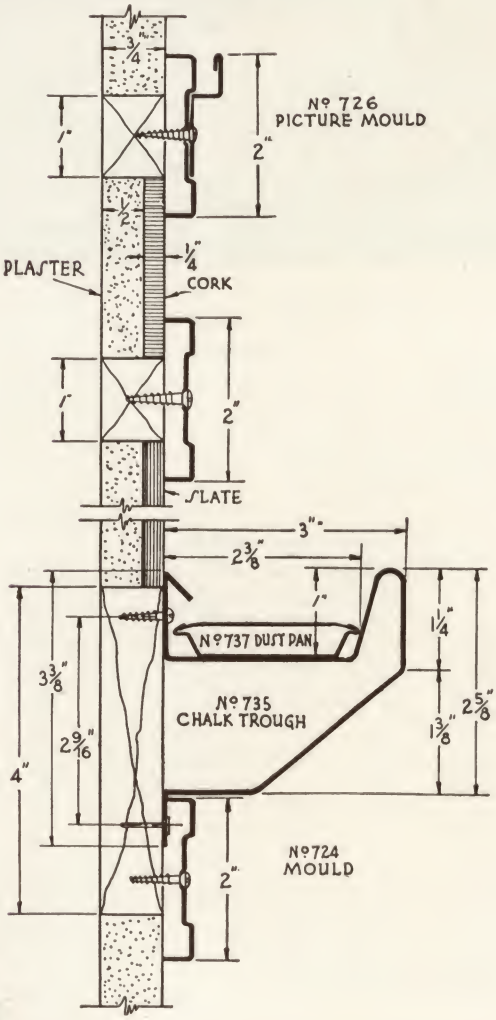
No. 735-H. Right End Stop.
No. 735-J. Left End Stop.

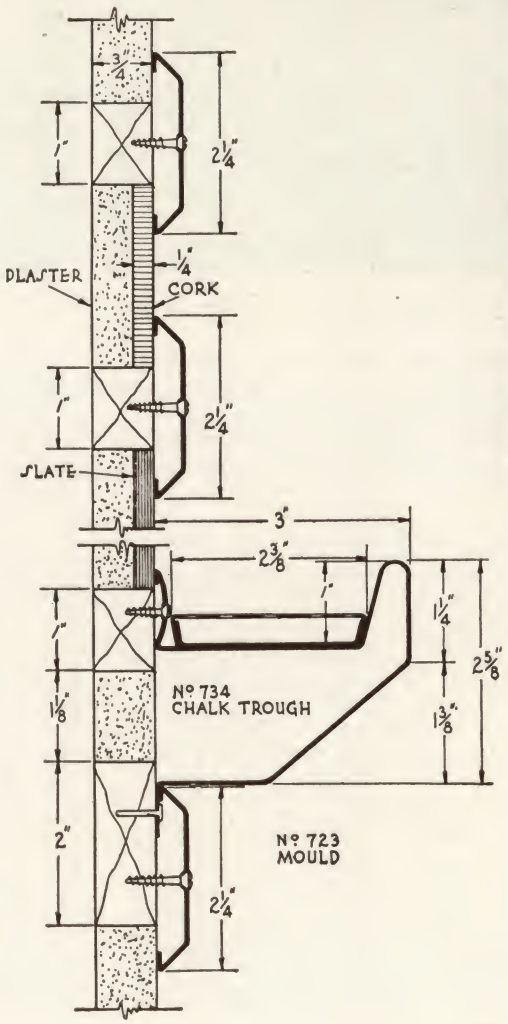
No. 734 CHALK TROUGH

734-H

734-J

No. 735
Right and Left End Stops are same as No. 734 End Stops

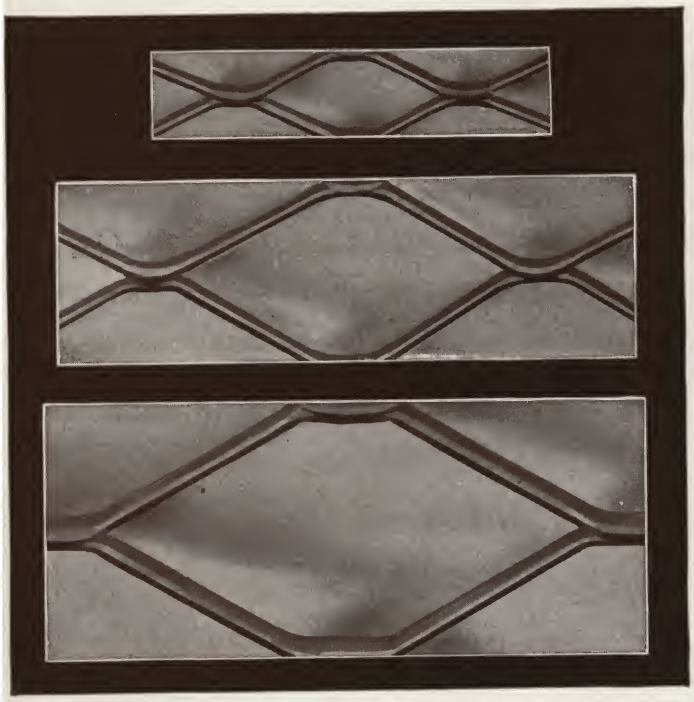


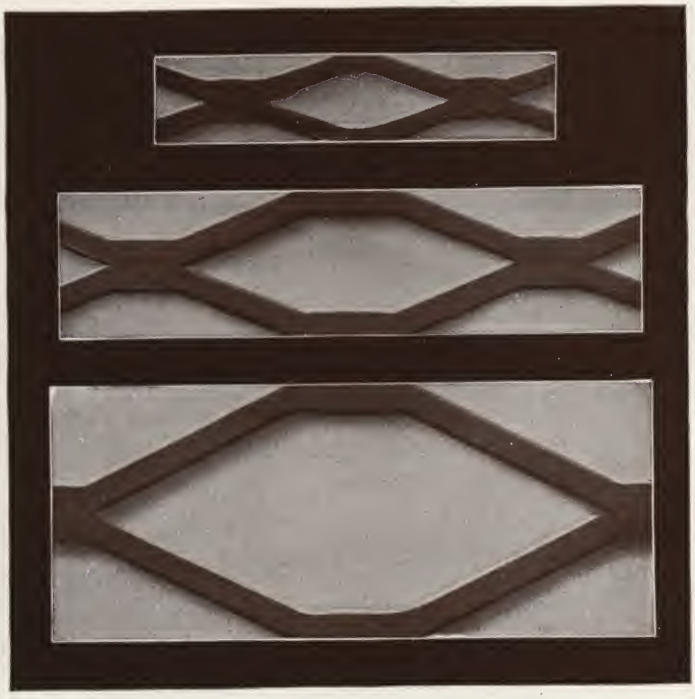


MILCOR EXPANDED AND FLAT EXPANDED METAL

MILCOR

Expanded Metal can be easily handled and worked. It has great strength and possesses adaptability for extensive use in many types of construction.





USES FOR EXPANDED METAL

Window, Door and Skylight Guards—Machinery Guards—Open Partitions—Concrete Reinforcement for Doors, Walls, Roof Slabs, Tanks, Etc.—Treads and Walkways, Air Conditioning Grilles—Station Platform Guards—Electric Heater Grids—Museum Guards—Ventilator Screens—Rubbish Burners—Cages and Runways—Portable Fence—Storage Bins.

FLAT EXPANDED METAL

A distinct innovation for a wide number of uses where heretofore wire mesh, or wire rods and perforated metal only were available. Milcor Flat Expanded Metal is cut, expanded and flattened from single sheets of steel, making it exceptionally strong and rigid. The diamond mesh pattern is uniform and the strands are free from burrs or roughness.

EXPANDED METAL

Designation	Weight in lbs. Per Sq. Ft. Plain	Galv.	Width of Sheet	Length of Sheet
½ inch No. 26. .	.26		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 24. .	.35		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 22. .	.43		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 20. .	.53		6′0″, 4′0″ and 8′0″	8′0″
½ inch No. 18. .	.74	.78	6′0″ also 4′0″	8′8″
¾ inch No. 16. .	.50	.53	6′6″ only	8′0″
*¾ inch No. 13. .	.80	.84	6′0″ also 4′0″	8′0″
¾ inch No. 10. .	1.19	1.25	4′0″ only	8′0″
¾ inch No. 9. .	1.80	1.89	4′0″ only	8′0″
1½ inch No. 13. .	.60	.63	6′0″ also 4′0″	8′0″
†1½ inch No. 10. .	.79	.84	6′0″ also 4′0″	8′0″
1½ inch No. 9. .	1.19	1.25	6′0″ only	8′0″

*Also furnished from stock 6′ x 10′, 6′ x 12′. †Also furnished from stock 4′ x 12′, 6′ x 10′, 6′ x 12′; (Sheets of special size by arrangement).

FLAT EXPANDED METAL

Style Number	Weight in Pounds Per Sq. Ft.	Width of Sheet	Length of Sheet
½ inch No. 18-20. . . .	.70	3′ or 4′	8′
½ inch No. 16-18. . . .	1.00	3′ or 4′	8′
¾ inch No. 16-18. . . .	.61	3′ or 4′	8′
¾ inch No. 14-16. . . .	.81	3′ or 4′	8′
1½ inch No. 16-18. . . .	.37	3′ or 4′	8′
1½ inch No. 14-16. . . .	.48	3′ or 4′	8′
¾ inch No. 9-11.	1.69	3′ or 4′	8′
1½ inch No. 9-11.	1.13	3′ or 4′	8′

The first digit of the Style Number is the nominal opening the short way of the diamond or the direction of the width of the sheet; the second digit indicates approximate gauge of plate from which the unflattened expanded metal was cut; the third digit indicates approximate gauge of mesh after flattening.

for CONCRETE REINFORCING . . . WINDOW GUARDS . . . SKYLIGHT GUARDS FENCING . . . MACHINERY GUARDS *and* INDUSTRIAL PARTITIONS

PARTITIONS

Milcor Expanded Metal is particularly suitable for building partitions because it is strong and durable . . . compact and economical. It permits light, airy enclosures . . . and is **Firesafe.** Milcor Partition Bar Accessories are designed for quick construction.

DOOR AND WINDOW GUARDS

Guards for windows and doors can be quickly and economically constructed with Milcor Expanded Metal and Accessory Framing Products. Frame Bar, Frame Bar Corners, Curved Hinges, Milcor Clips, facilitate rapid erection.

SKYLIGHT GUARDS

Milcor Expanded Metal has no equal for use in constructing Skylight Guards. Its strength and rigidity provide great protection . . . the open mesh allows for maximum passage of light and air . . . and the erection is simple and easy with the aid of Milcor Frame Bars, Frame Bar Corners, and Accessories.

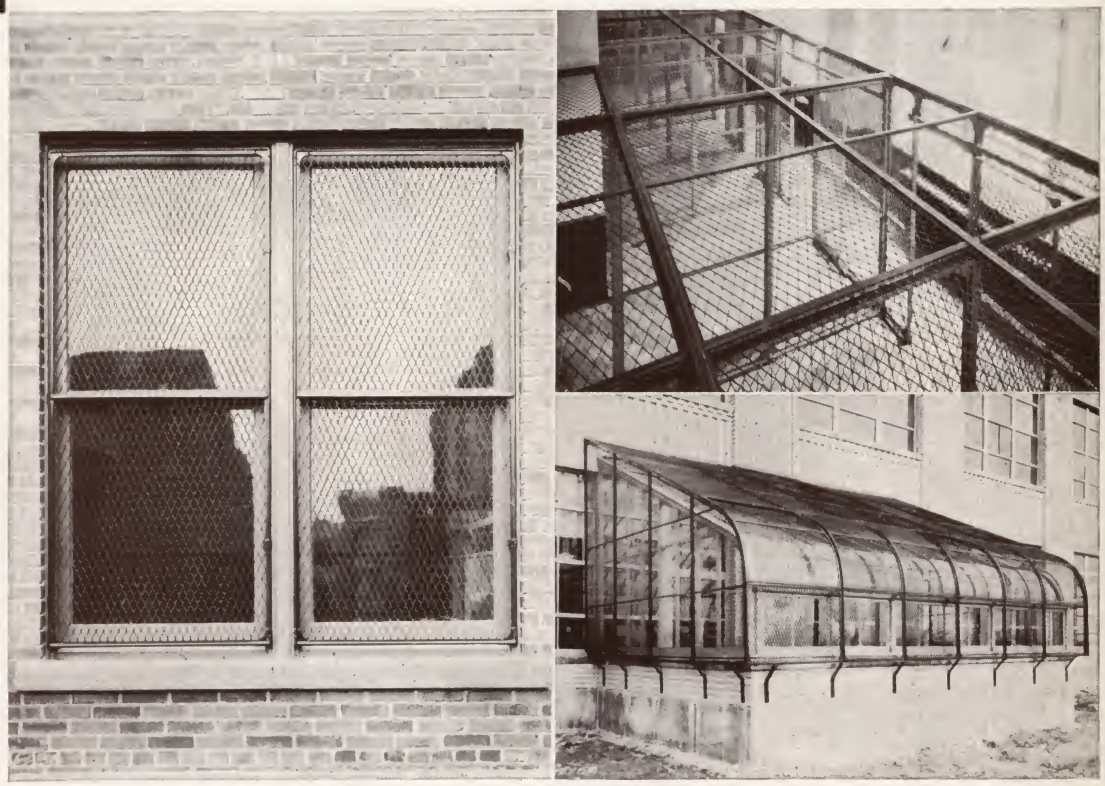
MACHINERY GUARDS

Milcor Expanded Metal is especially designed for and adapted to the making of Safety Guards for machinery, and is considered standard for this work. Due to the process of manufacture, it is so strong that it will withstand any amount of vibration and stress. The open mesh, free from burrs, permits easy cleaning with a stiff wire brush, from the outside. The sheets are fabricated in standard widths for economical cutting . . . and can be bent and formed to fit any particular machine.

THE MOST PRACTICAL MATERIAL FOR FACTORY PARTITIONS AND GUARDS OF ALL KINDS

Made from a single sheet, Milcor Expanded Metal has great strength and rigidity . . . far greater than welded or woven fabrics. The strands are clean and smooth . . . there are no burrs or rough spots to interfere with the erecting of Expanded Metal. The sheets can be cut in any direction to form pieces of varying sizes . . . the strands will not ravel or loosen. Milcor Expanded Metal can be readily formed in any desired shape for countless purposes with surprising economy.

If you are interested in a special fabrication of Milcor Expanded Metal, write the Milcor Engineering Department for the solution of specific problems.



Illustrations show adaptability for Milcor Expanded Metal for Window Guards, Open Partitions, and Conservatory Guards.

MILCOR EXPANDED METAL REINFORCING MESHES FOR CONCRETE WORK

Style Number	Cross Sectional Area	Weight, Pounds Per Sq. Ft.	Width of Sheets Short Way of Diamonds	Size of Diamond	Length of Sheets Mill Shipment
3-13-075	.075	.25	6′ 4″	3″x8″	8′-10′-12′-16′
3-13-10	.10	.34	7′ 0″	3″x8″	8′-10′-12′-16′
3-13-125	.125	.42	5′ 8″	3″x8″	8′-10′-12′-16′
3-9-15	.15	.51	7′ 0″	3″x8″	8′-10′-12′-16′
3-9-175	.175	.60	6′ 0″	3″x8″	8′-10′-12′-16′
3-9-20	.20	.68	5′ 3″	3″x8″	8′-10′-12′-16′
3-9-25	.25	.85	4′ 2½″	3″x8″	8′-10′-12′-16′
3-9-30	.30	1.02	7′ 0″	3″x8″	8′-10′-12′-16′
3-9-35	.35	1.19	6′ 0″	3″x8″	8′-10′-12′-16′
3-4-40	.40	1.36	4′ 7″	3″x8″	8′-12′-16′
3-4-45	.45	1.53	4′ 1″	3″x8″	8′-12′-16′
3-4-50	.50	1.70	7′ 4″	3″x8″	8′-12′-16′
3-4-55	.55	1.87	6′ 8″	3″x8″	8′-12′-16′
3-4-60	.60	2.04	6′ 1½″	3″x8″	8′-12′-16′

NOTE: When ordering, specify style number, length of sheets wanted and quantity of sheets required.

MILCOR MANUAL

FIREPROOF BUILDING PRODUCTS

MILCOR STEEL COMPANY

Gold Bond

HANDBOOK

CATALOG OF GOLD BOND

WALL AND CEILING

BUILDING MATERIALS

· 1939 ·

THE Gold Bond HANDBOOK

ON RELATED PRODUCTS FOR WALLS AND CEILINGS

Section 1. GOLD BOND PLASTER BASES, LATH SYSTEMS . . . . . Page 1
Section 2. GOLD BOND PLASTER, LIME, PAINT, TEXTURES . . . . . Page 13
Section 3. GOLD BOND WALLBOARDS . . . . . Page 35

For Gold Bond Insulation and Acoustical Treatment, see File Index.
For Monolithic Gypsum Floor and Roof Construction, see File Index.

NATIONAL GYPSUM COMPANY, BUFFALO, N. Y.

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PLANTS: PORTSMOUTH, N. H. NEW YORK, N. Y. CLARENCE CENTER, N. Y. NATIONAL CITY, MICH. AKRON, N. Y. YORK, PA. LUCKEY, OHIO NILES, OHIO ROTAN, TEX. SAVANNAH, GA. MOBILE, ALA. FORT DODGE, IOWA MEDICINE LODGE, KAN. ORANDA, VA.

SECTION ONE

GOLD BOND
PLASTER BASES

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STANDARD GYPSUM LATH

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PERFORATED GYPSUM LATH

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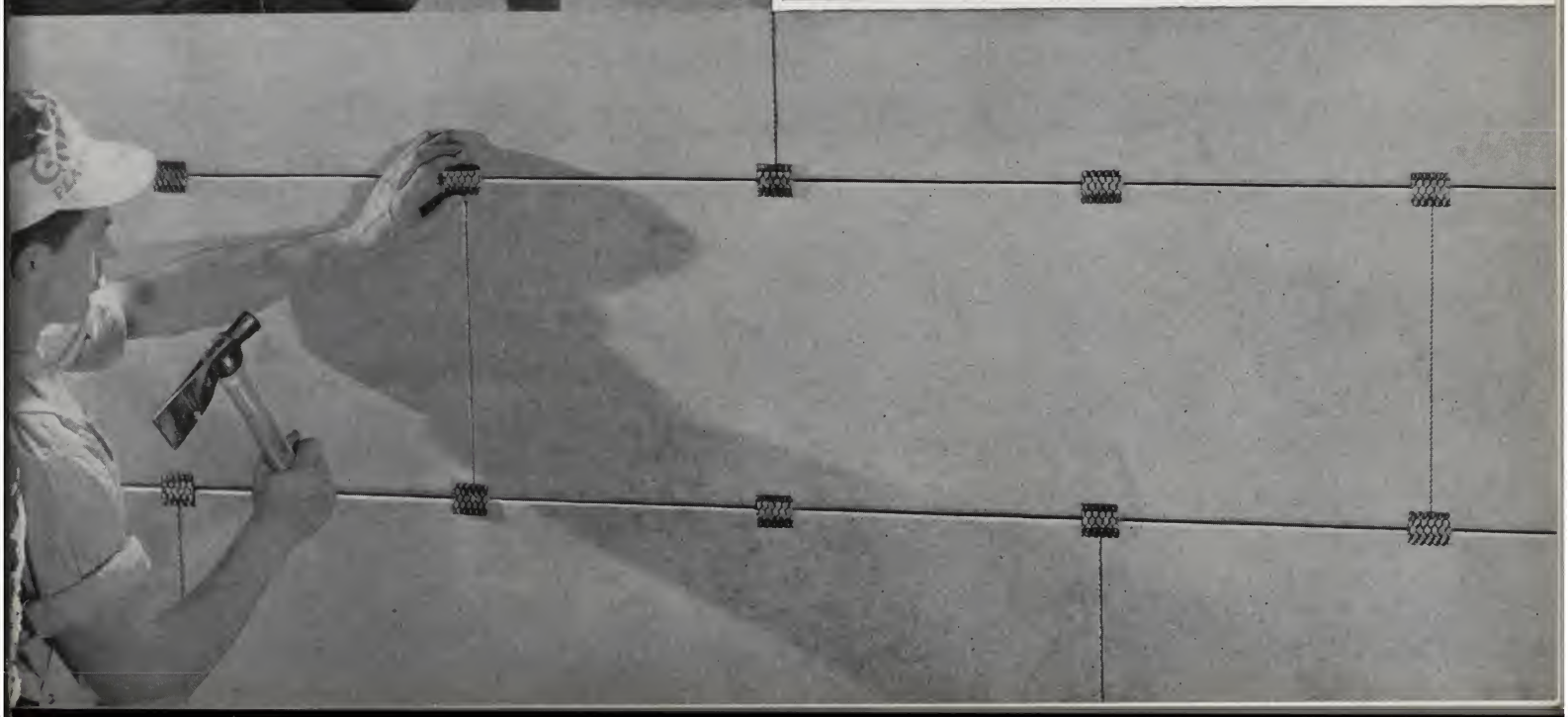
"FLOATING WALL" SYSTEM

Pages 7-10
METAL LATH AND ACCESSORIES

Pages 11-12
"CLIP-ON" SYSTEMS
For Suspended Ceilings
For 2-Inch Solid Partitions

Pages 28-34 Section Two
SPECIFICATIONS . . . LATH AND PLASTER

See File Index
GYPSUM LATH
With Aluminum Foil Insulation



GOLD BOND STANDARD GYPSUM LATH

The Modern Plaster Base with Core of Solid Gypsum Builds Stronger Walls and Ceilings

GOLD BOND GYPSUM LATH is made under the same exclusive patents as Gold Bond Gypsum Wallboard, the only difference being that the sizes are smaller and the gypsum core is encased in a heavy fibre sheet that bonds tightly with plaster. The long sides have closed edges and are round, as illustrated. The short ends are cut perfectly square.

Superior Bond to Plaster

The bond of plaster to Gold Bond Gypsum Lath is not dependent on mechanical keys but is obtained by the felting action of billions of gypsum crystals in the set plaster embedding themselves onto the surface of the Gold Bond Gypsum Lath during the setting action. Authoritative tests have shown this bond to be four times as great as any mechanical bond such as that obtained on wood lath, metal lath, etc.

Fireproof . . . Adds Structural Strength

The solid gypsum core of Gold Bond is non-inflammable and non-combustible. In repeated blow-torch tests, has demonstrated its ability to resist fire. Numerous testimonial letters have been received telling how effectively Gold Bond has withstood scorching flames and prevented the spread of fire by protecting the wood studs.

The strength and rigidity imparted to walls and ceilings by the use of Gold Bond Gypsum Lath adds considerably to the structural strength of the building as a whole. When covered with ½ inch of plaster, it makes a wall ⅞ inch thick . . . solid gypsum rock.

Won't Warp or Buckle—Saves Plaster Cracks

Gold Bond Gypsum Lath will not expand, contract, warp or buckle. One of the chief reasons for plaster cracking is the twisting or warping of the lath. This can't happen with Gold Bond as the rock-like panels lay perfectly flat and are not affected by dampness or climatic changes.

Cuts Labor Cost and Saves Plaster

With wood lath, spaces are left between the laths and much of the plaster goes into these spaces to form "keys." No "keys" are required with Gold Bond. The sturdy panels are butted together and *all* the plaster goes on the surface of the lath. This saving of plaster is considerable on a house of average size.

Application costs are cut, too, as the large panels of Gold Bond are applied much quicker than the narrow wood lath strips. Only 16 nails are needed to a 16″ x 48″ panel—4 nails to each stud.

Showing the distinctive indented surface of Gold Bond Gypsum Lath. The solid gypsum core is encased in this tough fibre covering.

Sizes and Thicknesses

⅜″ Thick	16″ x 32″	6 panels per bdle.	21⅓ sq. ft.
⅜″ Thick	16″ x 36″	6 panels per bdle.	24 sq. ft.
⅜″ Thick	16″ x 48″	6 panels per bdle.	32 sq. ft.
½″ Thick	16″ x 32″	6 panels per bdle.	21⅓ sq. ft.
½″ Thick	16″ x 36″	6 panels per bdle.	24 sq. ft.
½″ Thick	16″ x 48″	6 panels per bdle.	32 sq. ft.

Also made under the name Gold Bond Liner Board with non-indented surface. . . Thicknesses of ¼″, ⅜″ and ½″. Sizes of 24″ x 48″, 32″ x 36″ and 32″ x 48″.

Gold Bond Gypsum Lath comes in handy bundles that are light and easy to handle. A bundle of 16″ x 48″ x ⅜″ contains 6 panels.

For Gold Bond Gypsum Lath with Aluminum Foil Insulation, See File Index.

GOLD BOND PERFORATED GYPSUM LATH

Embodies All the Advantages of Standard Gypsum Lath *Plus* a One Hour Fire Rating for Walls

Provides Fire Protection for Wood Frame Buildings

GOLD BOND PERFORATED GYPSUM LATH is standard lath with holes about the size of a nickel drilled through the panels. When the surface is plastered, enough of the plaster is forced through the perforations to form mushroom-like "keys" as pictured in the next column. Insures a double bond with plaster—the natural or chemical bond that occurs between the indented surface of the lath and the plaster, plus the mechanical bond provided by the "keys."

Official tests conducted according to regulations of American Standards Association have shown Gold Bond Perforated Gypsum Lath to have qualified for a one hour fire rating for walls, when plastered in the standard manner. This means under normal conditions a fire will be confined to the room in which it originates for one full hour—long enough for fire apparatus to arrive.

Staggered Arrangement of Perforations Insures Greater Strength

As shown in the illustrations, the perforations are so arranged that there are not more than three holes across the width of the panel. This is strictly a Gold Bond feature and makes this lath the strongest of its type.

Other Advantages That Combine to Make This an Outstanding Plaster Base

In addition to its one-hour fire rating, Gold Bond Perforated Gypsum Lath offers these important advantages over old-style inflammable wood lath: It is moisture proof and unaffected by climate changes. Won't expand, contract, buckle or twist. The rock-like panels add greater strength so that the plaster walls and ceilings are better able to withstand structural strains. Homes in which this fireproof modern plaster base is used have an extra appeal to prospective buyers.

Application

Gold Bond Perforated Gypsum Lath is applied the same as standard gypsum lath . . . four nails to each stud—the nails to be 4 in. apart and ⅜ in. in from edge.

Size and Thickness

Gold Bond Perforated Lath is ⅜ in. thick and supplied in two sizes, 16x32 in. and 16x48 in. Packed 6 panels to a bundle.

Mushroom-like keys automatically form on the reverse side which grip the lath tightly.

Sturdy, rock-like panels of Gold Bond Perforated Gypsum Lath are applied quicker than wood lath and give wood framing the fire protection it needs.

As the plaster is trowelled on the workman can feel the perforations take hold. The small picture above shows what actually happens on the reverse side of the lath.

NATIONAL GYPSUM COMPANY

THE GOLD BOND "FLOATING WALL" SYSTEM

A New Patented Method of Building Walls and Ceilings With "Free Action" to Withstand Structural Strains and Vibrations Cuts Room-to-Room Noise . . . One Hour Fire Rating for Walls

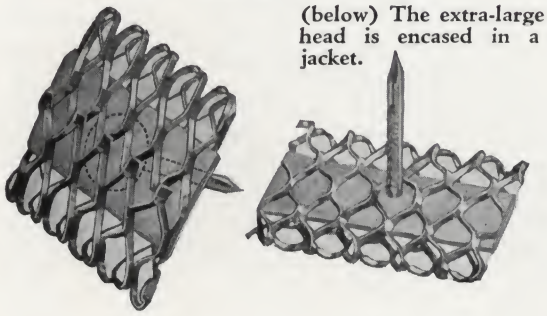
THE GOLD BOND "Floating Wall" System promises to completely revolutionize old-time methods. It provides the three all-important features of better wall and ceiling construction so much desired by every home builder but previously denied because of prohibitive cost.

The entire system is built around a new type of lath nail—the "Floating Wall" nail—a large headed nail, with the head encased in deadening felt in such a way as to provide resiliency . . . then reinforced with a double thickness of expanded metal . . . and the whole fabricated into one convenient unit for the lather. These special nails are used *between* the panels of Gold Bond Gypsum Lath, building an elastic "Floating Wall," free from rigid attachments to framing members. No plaster can touch the head of nail . . . no direct metallic contact between plaster and wood framing.

Provides New Features Never Before Obtainable in Moderately Priced Homes

The Gold Bond "Floating Wall" System insures these added advantages: (1) The danger of plaster cracks occurring from vibration or settling of the building is practically eliminated. (2) Sound transmission from one room to another is effectively checked. (3) One hour fire protection is provided for the wood framing. Heretofore, only hotels, fine buildings and the better class of apartments could boast of these features. Now they can be built into homes in every price class from a $2,500 cottage to a $60,000 mansion.

The "Floating Wall" Nail



(below) The extra-large nail head is encased in a felt jacket.

(above—left)
Showing the felt covered by the metal reinforcing with the large head of the nail dotted in.

Added Cost Per Home Is Only a Few Dollars

No special skill is required to erect walls and ceilings by this new method. Lathers get the "hang" of it in a few minutes and if anything, labor cost is less. The only special material required is the "Floating Wall" nails. They cost a little more than standard nails but only four "Floating Wall" nails are used along edge of each 48 in. gypsum lath panel, as compared with sixteen nails per panel under the former method.

The "Floating Wall" Nails are driven *between* the panels of gypsum lath.

A typical "Floating Wall" job ready for plastering in the regular manner.

The Gold Bond "Floating Wall" System (Continued)

(1) Provides Resiliency . . . Lessens the Danger of Plaster Cracks

The chief reason for plaster cracks is the natural movement of framing members. There is no way to avoid this movement which in most cases is almost imperceptible. What the "Floating Wall" does is to get around the motion, so that although it still exists, it can do no harm to the plaster wall or ceiling.

Under normal conditions, with a completely rigid tie to the studs and joists, the twisting or warping of the framing members of even a few thousandths of an inch can result in plaster cracks. The "Floating Wall" system provides a resilient tie between the stud and the plaster itself. In effect the wall actually "floats" although strong and rigid and outwardly no different in appearance than a wall of conventional construction.

Months of careful testing in the Gold Bond Laboratories and systematic checking of actual jobs prove the "Floating Wall" system is crack resistant almost beyond belief. In a typical deflection test, a series of identical wall areas were built with wood lath, gypsum lath and the Gold Bond "Floating Wall" System; then plastered under standard specifications. At 1/8 in. deflection, the first crack appeared in the plaster over wood lath. Over Gypsum lath, cracks appeared at a deflection of 1/4 in. Deflection of 1 3/8 in. was needed to put a hair-line crack in the "Floating Wall." As every builder knows, deflection of 1 3/8 in. is almost inconceivable on an actual job.

(2) Reduces Sound Transmission from Room to Room

Walls built to resist passage of sound from one room to another have always been impractical in standard residential construction for the same reason that crack-proof walls and fire-proof walls have been out of the question—high cost. Now, with the "Floating Wall" System, at little or no extra cost, all three features can be provided in one operation.

Sound Transmission Loss is the measure of effectiveness that a wall, ceiling or floor area retards the passage of sound through the structure. This value is measured in decibels which are simply units of sound intensity in scale of audibility.

In a test made by the National Bureau of Standards in Washington, D. C., the "Floating Wall" received an average transmission loss of 47.6 decibles. This rating reflects the amount of sound that is actually lost or dissipated—enough to completely nullify the passage of ordinary conversational sounds through a wall partition from one room to another.

(3) One Hour Fire Rating For Walls . . . Protects Wood Framing

The chief function of "fire-proof" construction in residential building is its ability to retard the spread of fire for a reasonable length of time—long enough for fire apparatus to arrive.

To prove the effectiveness of the "Floating Wall" construction to withstand fire, tests were conducted in a leading laboratory in accordance with standard fire test specifications, A2-1934.

A standard wood frame partition approximately 16 ft. x about 10 ft. 4 in. was constructed with Gold Bond Gypsum Lath on each side, applied with "Floating Wall" nails. Each face was finished in the regular manner with 1/2 in. Gold Bond Plaster and lime putty. During the test a load equal to the allowable working load on the net area of the wood studs was applied, totaling about 15 tons for the 16 ft. wide partition.

At the end of the test this "Floating Wall" was shown to have qualified for a one hour fire rating for walls under the American Standard Association regulations. This means that this type of construction can stop the spread of fire for at least one hour under normal conditions.

No special equipment needed except the "Floating Wall" nails which are sold by Gold Bond dealers along with the Gold Bond Gypsum Lath.

Lath is applied to ceilings the same as to side walls except an extra row of nails is used along the center of the panels. See detail drawing on next page.

Plastering is done in the usual manner. The expanded metal over the nail heads acts as extra reinforcing and insures uniform thickness of plaster.

NATIONAL GYPSUM COMPANY

The Gold Bond "Floating Wall" System (Continued)

STANDARD SPECIFICATIONS

Scope of Work

Gold Bond "Floating Wall" System shall be used in the following locations:

(LIST)

Examination of Framing Structure

Lather shall examine all framing for accuracy and proper nailing before applying lath. Openings shall be framed and electrical outlets properly located. Any defects shall be reported to architect and no lathing shall be done until such defects have been corrected.

Material

1. All materials shall be manufactured by the NATIONAL GYPSUM COMPANY and shall be delivered to the job in their original containers.

2. Lath—Gold Bond Gypsum Lath (16 in. x 48 in. x ⅜ in. thick).

3. Nails—Gold Bond "Floating Wall" nails shall be used exclusively.

4. Joint Reinforcing—Gold Bond Galvanized Corner Bead for external angles. Gold Bond 3 in. Cornerite for internal angles.

5. Plaster

a. *Base Coat*—Gold Bond Plaster (specify type).

b. *Finish*—Gold Bond Finish Lime with Gold Bond Superwhite Gauging Plaster. Alternates—Gold Bond Smooth Trowel Finish, Gold Bond Sand Float Finish, Gold Bond Color Texture.

Application

1. All walls, ceilings, and partitions as specified shall be covered with Gold Bond Gypsum Lath.

2. Lath shall be applied with back of lath facing stud, joists or furring, taking care to break joints. Vertical joints shall not occur opposite each other on same stud.

3. Lath shall be cut by scoring with a knife or hatchet and then break over a straight edge.

4. Lath (16 in. x 48 in.) shall be nailed to sidewalls with four "Floating Wall" nails driven in the joints between the lath at each stud. Ceilings shall be nailed as above together with one "Floating Wall" nail driven midway between folded edges at each joist or furring strip. Core of boards shall be ruptured with point of lather's hatchet where "Floating Wall" nails are not placed in between joints.

5. Any openings for outlet boxes, etc., shall be clean and neatly fitted to proper sizes and location.

Reinforcing Angles

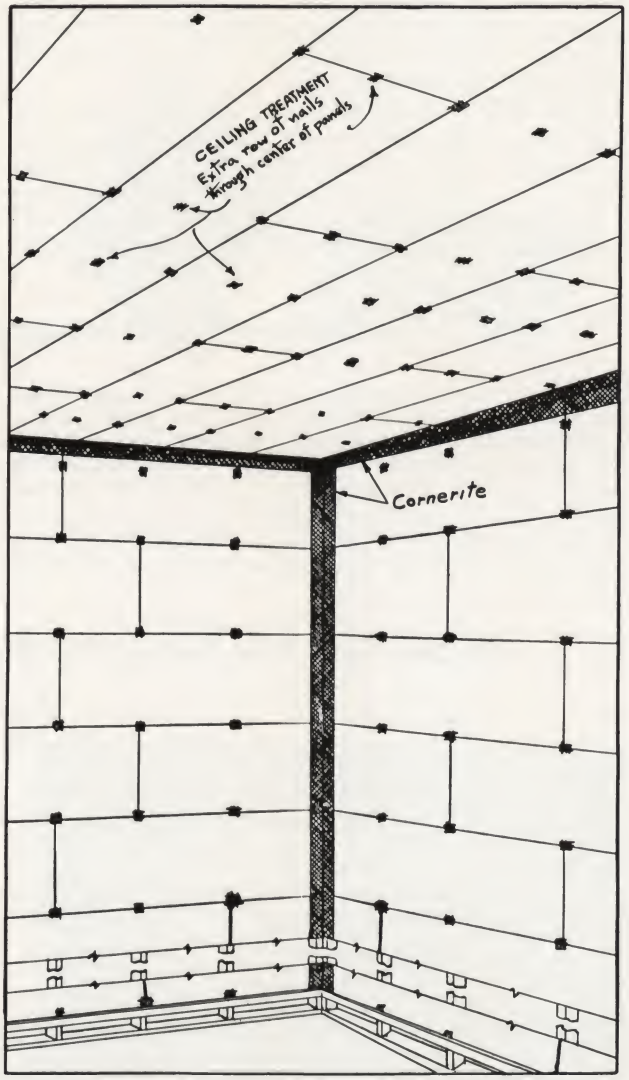
1. All internal angles of walls and ceilings shall be reinforced with Gold Bond 3 in. Cornerite and securely nailed.

2. All external angles shall be reinforced with Gold Bond Corner Bead (specify style) securely nailed.

Plastering

Follow standard specifications for plastering over gypsum lath. Plaster shall be full ½ in. thick.

Showing Wall and Ceiling Placing of Gold Bond "Floating Wall" Nails



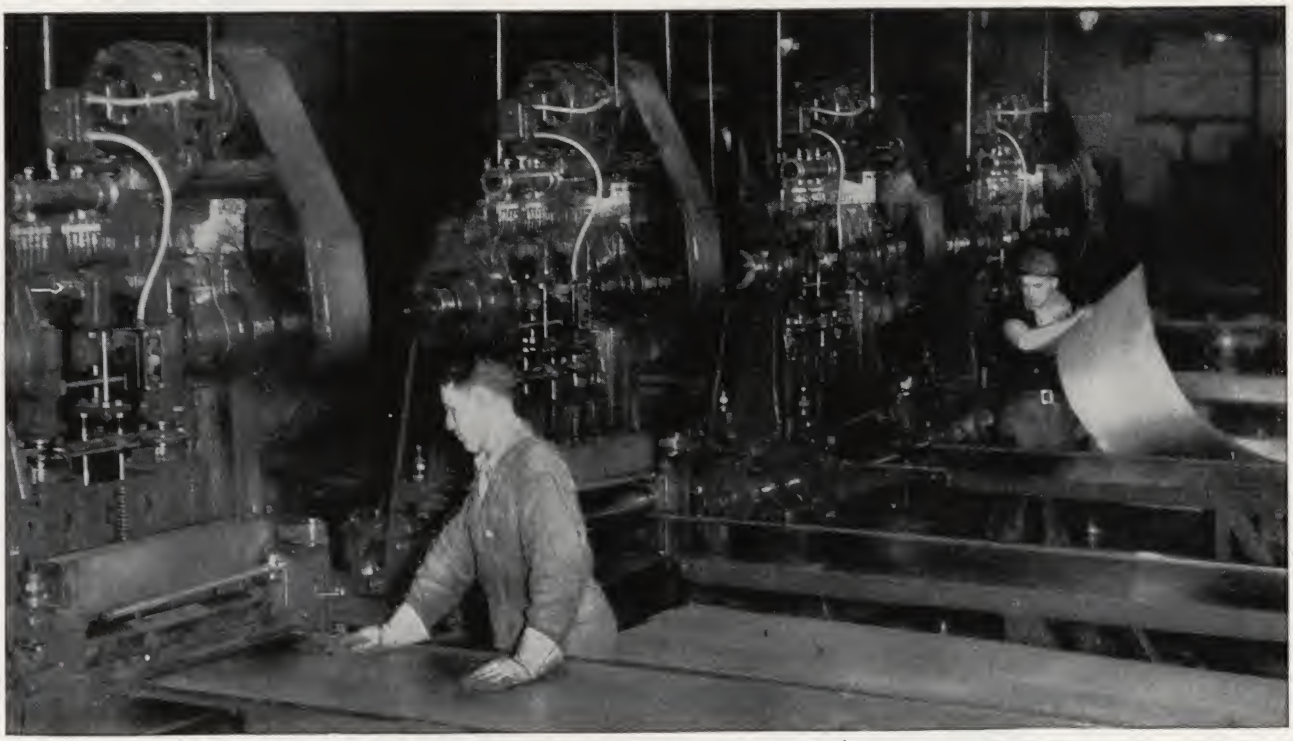
Wall Treatment—Four "Floating Wall" Nails are used along the 48 in. side of each panel of Gold Bond Gypsum Lath.

Ceiling Treatment—Same as for walls except there is an extra row of nails along the center of the lath panels (as indicated by arrows in above drawing), one center nail to each stud. The lath should be punctured with point of lather's hatchet to provide holes for the center nails.

Internal corners should be reinforced with 3 in. Gold Bond Cornerite. External corners should be covered with Gold Bond Corner Bead.

Patented and Exclusive to Gold Bond

The Gold Bond "Floating Wall" System is patented and available only through bona fide Gold Bond dealers . . . Upon request, National Gypsum Company will send, gratis, an illustrated book describing this system in detail.



Making the New Style Flat Rib Lath at Gold Bond's Metal Lath Plant in Niles, Ohio

GOLD BOND METAL LATH PRODUCTS

Most Gold Bond Metal Lath Products Are Made From Steel Sheets Manufactured by the Open Hearth Process

NATIONAL GYPSUM COMPANY manufactures at its Niles, Ohio plant a full line of metal lath products and accessories.

For years metal lath, because of its unmatched strength and one hour fire rating for both walls and ceilings, has been invariably specified as the plaster base for buildings and the better class of homes. Lately it has come into common use for all types of residences including homes costing as little as $4,000. As one expert puts it, "Savings realized on repair and decorating bills over the years are every bit as important to owners of small homes as to those who own mansions."

The National Board of Fire Underwriters gives Metal Lath with gypsum plaster on wood studs a one hour fire rating; second only to reinforced concrete and above all others in resistance to earthquake and explosion shocks.

Only a few of the most commonly used products are pictured here, including the new Arch Corner Bead, an exclusive Gold Bond feature. Other products are: Corner Beads (5 in. Wing, Expansion, Scalloped, Wide Flange, Standard Bull Nose and Bull Nose Expansion), Base Beads (Curved Point and Expansion Flush), Corner Bead Clips and Channel Clips, Hot Rolled Channels, Galvanized Tie Wire, Pencil Rods, Coal Doors and Steel Basement Sash.

An illustrated catalog describing the complete line will gladly be furnished by writing Metal Lath Division, NATIONAL GYPSUM COMPANY, Buffalo, N. Y.

Partitions made of Gold Bond Metal Lath and plastered in the customary way are rated by the National Board of Fire Underwriters as second only to reinforced concrete.

GOLD BOND METAL LATH

Gold Bond Small Diamond Mesh Lath

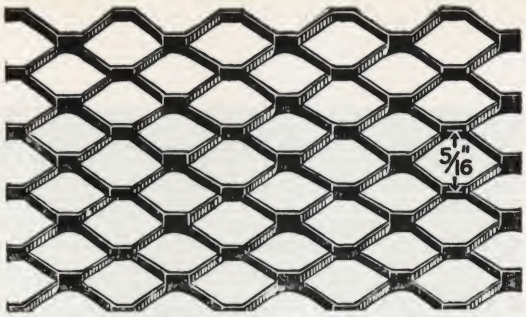
Can be used on any type of metal lath job. It constitutes better than 50% of all the metal lath sold.

Gold Bond Small Mesh boasts of having as small a mesh as any diamond mesh manufactured; containing approximately 3000 more keys per square yard than the regular ⅜ in. mesh. All sheets lay perfectly flat and each sheet has re-squared ends assuring full covering width. Regular ⅜ in. mesh can be furnished upon request. Is made from open hearth box annealed sheets.

Standard Weights—2.2, 2.5, 3.0, 3.4 lb. Furnished in painted steel, copper bearing and Armco Iron. Galvanized in 2.5 and 3.4 lb. only.

Sheet Sizes

—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.
—27 in. x 96 in. 10 sheets per bundle or 20 sq. yds.



Gold Bond Small Diamond Mesh Lath

Gold Bond 1/8-in. Flat Rib Lath

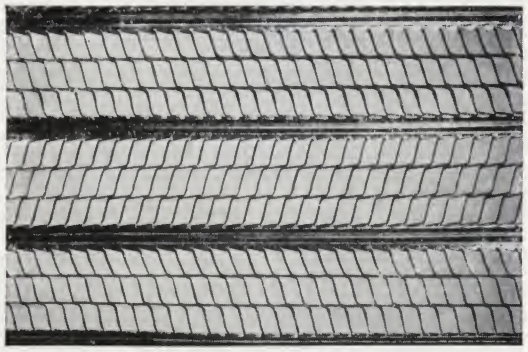
Primarily designed to meet a growing demand for a more rigid expanded metal lath, and a more economical plastering job . . . 1280 meshes to a square foot, providing more plaster keys than any other like product on the market.

Gold Bond ⅛-in. Flat Rib saves time and money in erection costs as the new size—27 x 96 in.—can be applied in exactly the same time as the usual 24 x 96 in. sheets.

Standard Weights—2.75, 3.0 and 3.4 lb. Furnished in painted steel and copper bearing steel. Galvanized in 3.4 lb. only.

Sheet Sizes

—27 in. x 96 in. 10 sheets per bundle or 20 sq. yds.
—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.


Gold Bond ⅛-in. Flat Rib Lath

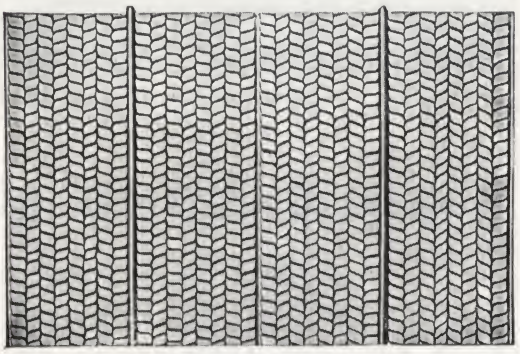
Gold Bond 3/8-in. Rib Lath

Is generally used for ceiling and for concrete reinforcing in floors in connection with steel joists, junior beams, etc.

Gold Bond ⅜ in. Rib is outstanding for its rigidity. Ribs are 4 in. on center. Sheets nest perfectly when lapping which results in a smooth surface for plastering, thereby eliminating bulges and creating a saving in plaster waste. Manufactured from open hearth box annealed sheets.

Standard Weights—2.5, 3.0, 3.4 and 4.0 lb. Furnished in painted copper bearing steel and Armco Iron. Galvanized in 3.4 lb. only.

Sheet Size—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.

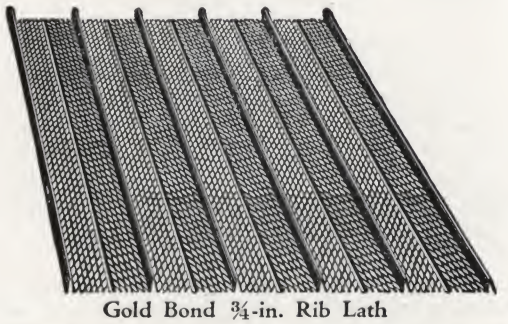

Gold Bond ⅜-in. Rib Lath

Gold Bond 3/4-in. Rib Lath

Used mainly as a form and reinforcement in concrete slab floor and roof construction. Won't bulge or sag. Ribs are spaced 4 in. on centers ¾ in. deep. . . . Also adapted for use as a plaster base in the construction of 2-in. solid partitions. Due to the rigidity and reinforcing feature of the ribs, no studs are required.

Standard Weights—.50 lb., .60 lb., .75 lb. per sq. ft. Furnished in painted steel and copper bearing steel. Galvanized in .50 lb. and .75 lb. weights. Armco or pure iron in .75 lb. weight.

Sheet Sizes—24 in. x 6, 7, 8, 9, 10, 11, 12 ft. 9 sheets per bundle.

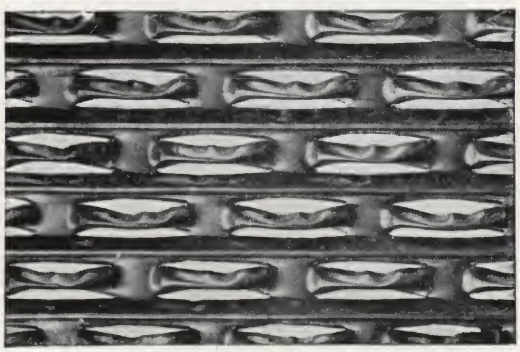

Gold Bond ¾-in. Rib Lath

Gold Bond Sheet Lath

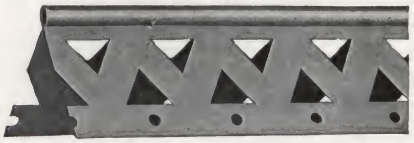
Is used generally for tile backing due to its being the most rigid lath manufactured. It requires considerably less plaster than any other type of metal lath and therefore, is often used on residences and large apartment buildings. The trough formation of the ribs creates a suction and makes it the ideal lath for overhead work on ceilings. Gold Bond Sheet Lath is of our own exclusive design. Manufactured from open hearth annealed sheets.

Standard Weights—4.5 lb. in painted and 5.5 lb. in galvanized.

Sheet Size—24 in. x 96 in. 9 sheets per bundle or 16 sq. yds.


Gold Bond Sheet Lath

GOLD BOND METAL LATH ACCESSORIES

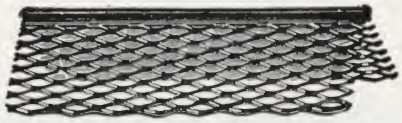


Gold Bond Arch Corner Bead

Gold Bond Arch Corner Bead

Use—Gold Bond Arch Corner Bead is the all-purpose corner bead. Used for vertical and horizontal corners or may be easily bent for arches. Full description on next page.

Stock Lengths—6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lin. ft.

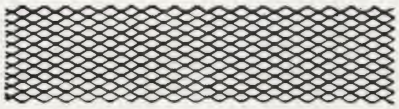


Gold Bond Standard Expansion Corner Bead

Gold Bond Standard Expansion Corner Beads

Use—Gold Bond Standard Expansion Corner Beads can be used in all types of construction. Forms an exceptionally fine key due to the reinforcing given by the 2½ in. wings. Is easily erected.

Stock Lengths—6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Shipped in crates of approximately 500 or 1000 ft. only. Weighs 208 lbs. per 1000 lin. ft.



Gold Bond Stripite

Gold Bond Stripite

Use—Gold Bond Stripite is diamond mesh lath cut into strips. Used over joints, around window and door frames in construction where metal lath is not used throughout. Standard in painted steel. May be had in copper bearing or galvanized steel.

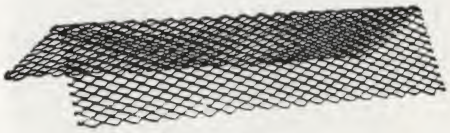
Sizes—2, 3, 4, 6 or 12 in. wide by 96 in. long. Packed 63 pieces per bundle (504 lin. ft.) 3x96 in. Stripite weighs 60 lbs. per 1000 lin. ft.

Gold Bond Standard Base Bead

Gold Bond Standard Base Bead

Use—Gold Bond Standard Base Bead is used as a ground where the cement base is to be divided from the plastered wall. Assures a straight and perfect division line. Made in both ½ and ¾ in. ground.

Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 180 lbs. per 1000 lin. ft.



Gold Bond Cornerite

Gold Bond Cornerite

Use—Gold Bond Cornerite is diamond mesh lath cut into strips and bent to a right angle. Used in interior corners of walls and ceilings over wood lath, gypsum lath, etc. Standard in painted steel. May be had in copper bearing or galvanized steel.

Sizes—2, 3, 4, 6 or 12 in. wide by 96 in. long. Packed 63 pieces per bundle (504 lin. ft.) . . . . 3x96 in. Cornerite weighs 125 lbs. per 1000 lin. ft.

Gold Bond Picture Mould

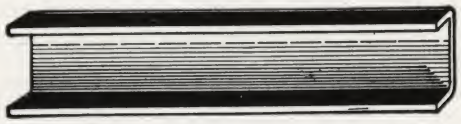
Gold Bond Picture Mould

Gold Bond Picture Mould is a metal concealed picture moulding. It is erected before walls are plastered and is absolutely invisible when wall is finished.

Stock Length—10 ft. only. 26 gauge. 10 pieces per bundle. Weighs 230 lbs. per 1000 lin. ft.

GOLD BOND METAL LATH PRODUCTS

Gold Bond Cold Rolled Channels



Are used generally for suspended ceiling work and 2 in. solid partitions. They are formed cold from the best quality strip steel. Gold Bond Channels are absolutely straight and are especially adaptable to form work because of their bending qualities and rigidity.

Type	Stock lengths shown in feet	Packed Pcs. per bdle.	Weight, Lbs. 1000 lin. ft.
Pencil	12, 14	20	113
Box	16, 18, 20	20	276
¾ in.	16, 18, 20	20	276
1 in.	16, 18, 20	20	332
1½ in.	16, 18, 20	10	442
2 in.	16, 18, 20	10	553

Furnished unpainted unless otherwise specified. Pencil Channel always furnished in painted stock.

Gold Bond Metal Arches

Are made from galvannealed sheet steel. A perfect arch for approximately half the cost of curved wood forms to which must be fitted corner bead and metal lath. They are easy to erect and are ideal for residences and apartment houses. Gold Bond Metal Arches are made in true circle, gothic and elliptic designs. They are standard for 2x4 studs or bucks. The studs or bucks are to be spaced 1½ in. wider than the desired finished opening.

This allowance is for the thickness of the lath and plaster ground. Can be jointed with standard corner bead by using the shank of a No. 7 box nail.

Styles and Erection Details

Style of Arch	Spacing of Studs or Bucks	Width of Finished Opening	Height from Spring-line to Crown
No. 11	21½″	20″	10″
No. 22	33″	31½″	15¾″
No. 33	33″	31½″	11⅜″
No. 44	51″	49½″	12½″
No. 55	63″	61½″	13″
No. 66	72″	70½″	13″

Gold Bond Metal Arches are easily fitted over the lath. Saves time and insures perfectly formed arches.

Gold Bond Arch Corner Bead

Won't Kink or Break

Easily Prepared for Bending

A new product, Gold Bond Arch Corner Bead has met with instant acceptance among builders and dealers. Serves a double purpose—as a corner bead for vertical or horizontal corners—as an arch bead for curved openings. Arches can be quickly made on the job at a decided saving.

Ordinary corner beads invariably break or kink at the nose when bent. Not so with Gold Bond Arch Corner Bead because its unique design permits utmost flexibility. No mechanical bender is necessary. Simply snip one flange as illustrated at the left and bend to the desired radius. Fits over any style of lath. The flanges have twice as many perforations as most corner beads which means more plaster "keys" and greater bonding strength.

Supplied in lengths of 6, 7, 8, 9, 10 and 12 ft. Made in 26 gauge. 24 gauge on special order. Packed 10 pieces per bundle. Weighs 200 lbs. per 1000 lineal ft.

For Ornamental Plaster Work

GOLD BOND "CLIP-ON" SYSTEMS For Suspended Ceilings and 2-inch Solid Partitions

Two Patented Systems Which Combine the Use of Gold Bond Gypsum Lath and Metal Installation Clips . . . Quicker, Stronger, Cuts "Dead-Load" Weight One-Third . . . One Hour Fire Rating

SUSPENDED CEILINGS

THE important problem of keeping cracks out of suspended plaster ceilings has been approached in the most scientific and practical way in the development of the Gold Bond "Clip-On" System.

This method comprises the use of fireproof Gold Bond Gypsum Lath, galvanized copper bearing clips and standard coated channels. The channel grillage is so constructed as to permit expansion or contraction without transferring any of the resulting movement to the gypsum lath, thereby eliminating the most common cause for plaster cracks.

The panels of Fireproof Gold Bond Gypsum Lath slide into the metal clips and the job moves along like clock-work. Lathers get the "hang" of it quickly.

Stronger and Lighter

In accomplishing this freedom for expansion or contraction there is no sacrifice of strength or other desirable qualities of good ceiling construction. The Gold Bond "Clip-On" System builds the strongest ceiling of any known method. This outstanding strength is provided despite the fact that the weight of the ceiling is 20 to 30% less than usual. The "Clip-On" System weighs 45 to 50 pounds per square yard in contrast to the normal weight of 70 to 80 pounds.

One-Hour Fire Rating

The Gold Bond "Clip-On" Suspended Ceiling when plastered according to specifications, fully meets the standard one-hour fire test imposed by the fire underwriters.

Speedy Installation

Contractors find the "Clip-On" System easy to master and a real time-saver. One distinct saving—furring channels are spaced at 16-inch intervals instead of the customary 12-inch. This alone represents a saving of 25% in channels and erection labor.

The sturdy panels of Gold Bond System Lath, 16 x 48 inches, are easily clipped into place and provide a smooth, even base for plaster. Actual figures show that the plasterer will apply greater yardage per day than over any other type of plaster base.

Complete Gold Bond "Clip-On" Ceiling

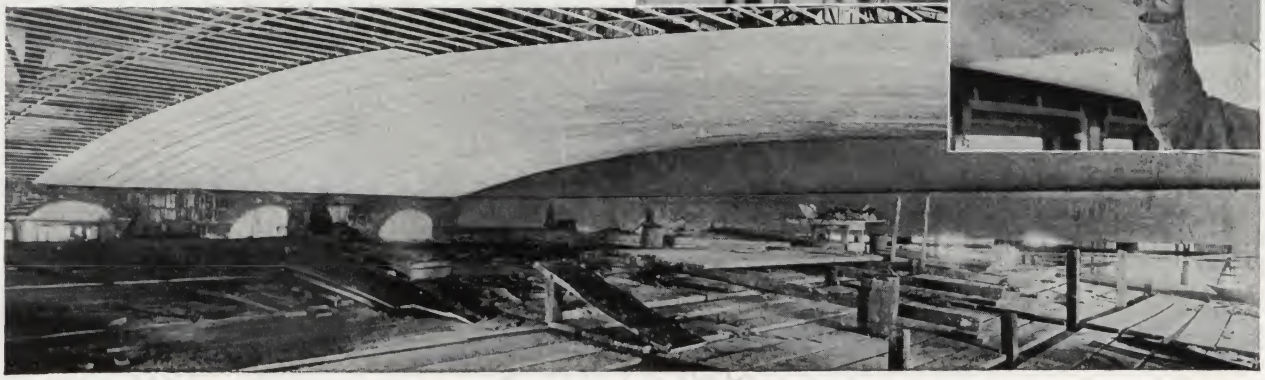
The Gold Bond "Clip-On" System is designed and sold for use with Gold Bond Gypsum Lath, plastered with Gold Bond Gypsum Plaster and finished with Gold Bond Finish Lime. In specifying the system with Gold Bond Products throughout, the architect or engineer is protected by one undivided manufacturing responsibility.

Descriptive Book on Request

National Gypsum Company will gladly send without charge, an illustrated book "Gold Bond 'Clip-On' System for Suspended Ceilings."

(left) Toggles are used on ceiling areas over 12 ft. square.

(below) Plasterers can work faster over this smooth base.



NATIONAL GYPSUM COMPANY

"CLIP-ON" SYSTEMS (Continued)

2 INCH SOLID PARTITIONS

THE GOLD BOND "Clip-On" 2-Inch Solid Partition provides a thin but very sturdy construction adaptable to hotels, apartment houses, office buildings, and especially to low-cost housing developments. Saves a full 2½ inches in width or length of a room as compared with conventional wood stud partitions, plastered on both sides. It also speeds up completion of the job at a decided saving in labor and material.

This system comprises the use of Gold Bond Perforated Gypsum Lath, galvanized copper bearings clips, and standard coated channels. Erection is rapid. Channels are spaced 24 inches on centers (or 16 inches); the gypsum lath panels 16 x 48 inches dropped into place and one sharp blow anchors the lath clips to channels. The job is then ready for plastering. As shown by the following chart, a saving of two days' time per room is effected.

DAY	2-IN. "CLIP-ON" SYSTEM	OTHER 2-IN. SYSTEMS
First	Lather erects channel studding and "clips-on" Gold Bond Gypsum Lath.	Lather erects channel studding and plaster base.
Second	Plasterer "backs up" channel studding area with scratch coat and also applies brown coat to gypsum lath side, and double backs with brown coat on channel side.	Scratch coat applied to metal plaster base. (This operation is entirely eliminated with the "Clip-On" System.)
Third	Finish coats, both sides.	Backs up channel side with fill coat.
Fourth		Brown coat on both sides.
Fifth		Finish coat on both sides.

One-Hour Fire Rating

The Gold Bond "Clip-On" Partition fully meets the requirements for a one-hour fire test rating. Not only is it a highly incombustible wall, but it provides real protection against spread of fire. As there is no wood studding, high temperatures cannot start combustion within the wall itself.

Plasterer (at left) filling in the channel side with the scratch coat. Lather (at right) builds up the partition quickly.

Other Advantages

The "Clip-On" System builds a 2 inch solid partition of extreme strength, yet remarkably light for a plaster partition. Enjoys the highest comparable rating on impact tests as conducted by the Bureau of Standards. Resiliency provided by metal clips practically eliminates danger of plaster cracks occurring from vibrations or structural strain.

Descriptive Book Available

Upon request National Gypsum Company will gladly send a large illustrated book . . . "Gold Bond 'Clip-On' System for 2 Inch Solid Partition Wall."

(left) Applying the "brown" coat to the face side. Plastering moves along fast over the Gold Bond Perforated Gypsum Lath.

(above) One sharp blow clinches clip No. 101 to channel.

(left) The edges of the lath panels don't have to "hit" on channels.

SECTION TWO

GOLD BOND
GYPSUM PLASTERS
LIME AND PAINT

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SPECIFICATIONS . . . LATH and PLASTER

See File Index
MACOUSTIC ACOUSTICAL PLASTER

At Left:

Mechanically controlled mixing and bagging equipment assure accurate blending and weighing of plaster without possibility of human error.

GOLD BOND—A COMPLETE PLASTER SERVICE

How Gold Bond Supervises the Quality of Its Plaster Every Step of the Way From Mine to Finished Wall

GOLD Bond Plaster mines and quarries are located in the richest gypsum sections of the country, the vast deposits insuring approximately a hundred years' supply of exceptionally pure rock.

Purity Assured

Here in these mines and quarries daily tests are made to assure the constant purity of the rock—actual tests proving that the purity of the gypsum has a decided effect upon the strength and hardness of the finished wall. High purity also increases the coverage and smooth working qualities of the finished plaster.

Gold Bond spares no trouble or expense to obtain the purest gypsum rock, and then follows it by laboratory tests through every process of manufacture to the finished job.

Tested for Individual Job

For this purpose—suiting the plaster to the individual job—the Gold Bond laboratories are constantly testing specimens of sand from every part of the country where Gold Bond plaster is used. Samples are continually being secured to meet changes in local conditions.

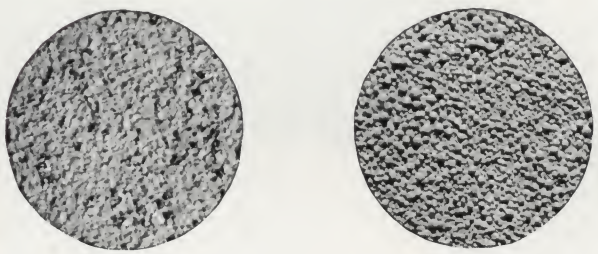
Before shipping, every batch of plaster is tested to meet the requirements of the particular sand of the vicinity into which the plaster is to be shipped. A somewhat costly process from the viewpoint of the manufacturer, but well worth the expense as it assures our customers of getting plaster that is particularly suited to their respective territories regardless of any unusual local conditions. New processes (patent applied for) insures uniformity of performance under all normal job variations and weather conditions.

Introduction of the new Gold Bond Microplastic Plaster in 1935 proves one of the greatest improvements in plaster history . . . .

Gold Bond Plasters have long been accepted as "standard" among the leading contractors of the country. Then in 1935, this enviable position was greatly enhanced by the introduction of a brand new plaster—Gold Bond Microplastic Plaster, produced after years of intensive research work.

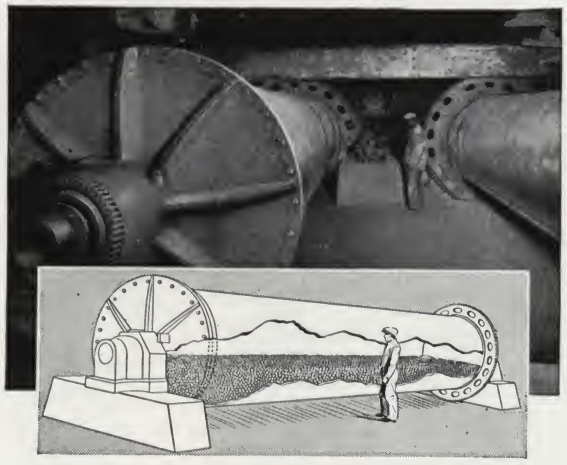
This improved method of processing has resulted in a product that is practically foolproof as far as application is concerned. Plasticity or workability has been increased 100% with far greater coverage. The new Gold Bond Microplastic Plaster met with instant approval and experts considered this to be the greatest forward step in the development of plaster in many years.

What the Micron-Sizing Process Actually Accomplishes



Before — After

Note the contrast between these microphotos. At the left the plaster is coarse and flinty, while at the right the plaster after the Micron-Sizing Process has been broken down into millions of tiny particles and then rolled into soft, felted balls.



New Equipment and New Processes Enable Gold Bond to Offer a New High Quality in Plaster

Two of the huge revolving mills which regrind the gypsum particles into micron sizes and roll them into soft felted balls.

Bottom: An X-ray drawing of interior of mill showing the 100,000 manganese steel balls which do the pulverizing.

Scientific Principle of Micron Sizes and Their Effect on Plasticity

It is a well established scientific principle that in the setting of plaster a gelatinous plastic film is produced on the surface of the particles of calcined gypsum. Gold Bond, as one step in manufacture, regrinds the particles to micron sizes (1/25,000 inch). The enormous increase in area resulting greatly multiplies the bulky gelatinous smooth working qualities.

GENERAL DATA

Characteristics and Application of Gold Bond Gypsum Plasters

The high grade gypsum rock used in the manufacture of all Gold Bond Plasters is hydrated calcium sulphate, containing approximately 20% of chemically combined water. In the calcination process most of this water is driven off, producing "plaster of Paris" which is the base of all gypsum plasters. On remixing with water on the job, the material takes back the water driven off in calcination and crystallizes or sets to the original gypsum rock.

In making Gold Bond Gypsum Plasters, small amounts of other materials are added to the basic "plaster of Paris" to control the time of set, working qualities, type of use, and particular market conditions of territory to which it is shipped.

May Be Used on All Plastering Bases

One of the many advantages of gypsum plaster is that it may be used on all types of plastering bases in addition to masonry surfaces. It may be used on gypsum, wood or metal lath; clay, concrete or gypsum tile or blocks; brick, concrete or other standard masonry plastering surface.

Adhesion Qualities

The particularly strong adhesive quality of gypsum plaster has been practically demonstrated in tests at the U. S. Bureau of Standards. It was conclusively shown that it does not depend entirely on mechanical keys but bonds on actual suction or adhesive qualities.

Dries Quickly

The advantages of the quick set and rapid drying qualities of gypsum plaster are very important in the completion of a building as well as reducing overhead. The usual time for a hard set is from 2 to 6 hours and complete drying in about 36 hours depending on weather and the season of the year. After drying there is no further sweating or dampness.

Durability

Gypsum plaster forms a hard, tough base for the application of finish coats or decoration. The tough base coats help the plaster wall to withstand rough usage which it may receive during the life of the building.

Low Coefficient of Expansion

After being applied, gypsum plaster remains inert and does not expand or contract even when subjected to fire. As it is made of gypsum it is absolutely incombustible.

Packaging

Shipped usually in 100 lb. paper bags; and some specialty products in 250 lb. barrels.

At Left:
Gypsum Mine at Clarence Center, N. Y.

At Right:
Gypsum Quarry at National City, Mich.

GLOSSARY OF TERMS AND INFORMATION REGARDING PLASTERS AND THEIR USES

In view of the use of numerous local or descriptive names for the same type of plaster and widely varying market practices, it is felt that the following classification of plasters as to names and uses will be of considerable value:

BASE COAT PLASTERS

Cement Plasters

These plasters constitute the bulk of tonnage of all types of gypsum plasters used. The term relates to all Neat (the term Neat designating a plaster containing no sand or other aggregate added at mill) plasters either with or without hair or sisal fiber. (Wood Fiber Plaster is never classified as a cement plaster.)

Cement plaster is also called by the following names in many markets:

(a) Hardwall
(b) Patent Plaster
(c) Neat
(d) Compound
(e) Paristone
(f) Base Coat Plaster

Fibered and Unfibered Cement Plaster

Hair Fibered Plaster—

Hair Fibered Plaster may contain either hair or sisal fiber. Sisal fiber is recommended as being more satisfactory than hair in plaster.

Unfibered Plaster—

This designates only cement plaster containing no fiber.

Uses for Cement Plaster—

This material is generally used for plaster work where good plaster sand is easily available and it is economically advisable to mix sand on the job rather than use a mill-mixed material. Cement Plaster is formulated for use with sand in amounts covered in directions and *should never be used Neat*—i.e., without addition of sand.

Sanded Plaster

This material is the same as Cement Plaster, except that a properly graded sand has been added at the mill in the proper amount for best plastering results. It has been called by many names listed under Cement Plaster except with the term Sanded used in addition.

Uses for Sanded Plaster—

This material is used largely where good plastering sand is not easily available, where absolute exactness of proportioning of amount of sand is required, where facilities for mixing are limited, or job is not large enough to justify trouble of mixing sand on the job. Sanded plaster is used solely with addition of water on the job.

Wood Fiber Plaster

This type of plaster contains a finely shredded wood fiber and is made primarily for use with addition of water only on the job. In some cases, however, a small amount of sand (never over one part by weight) is added on the job. In some markets this material is known as Pulp plaster.

Uses for Wood Fiber Plaster—

This material is used to a large extent for patch jobs, for work where an extremely hard wall is wanted, where base plaster is to be trowel finished, where sand is not easily available, etc.

Sanded Wood Fiber Plaster

This type plaster is on same general order as Wood Fiber Plaster except a small amount of specially graded fine sand is added. Its uses are the same as with Wood Fiber Plaster and it is used in certain markets where trade prefers a sanded wood fiber.

Concrete Bonding Plaster

This is a specially formulated wood fiber plaster to provide maximum bond to interior concrete surfaces. Ordinary gypsum or lime plaster does not bond properly to concrete surfaces. Water only is added in mixing on the job.

Bond Plaster

This material is the same as Concrete Bonding Plaster.

FINISH PLASTERS

Gauging Plaster

This is a specially ground calcined gypsum which may be either pure white or grey in color and quick or slow in set. Other names used to designate this material are as follows:

(a) Plaster of Paris
(b) Calcine
(c) Finish Plaster
(d) White Plaster (For pure white material only)
(e) Stucco

Uses of Gauging Plaster—

This material is always used in connection with lime putty finish and is the essential ingredient which provides an initial set and prevents the slow setting lime from shrinking, checking and peeling before the set of lime itself takes place. The failure to use the proper amount of Gauging Plaster is the cause of most failures on lime putty finish jobs.

The type of Gauging used depends on trade practices in each locality. The following types of material are used:

(1) White Gauging—Quick Set
(2) White Gauging—Slow Set
(3) Grey Gauging—Quick Set
(4) Grey Gauging—Slow Set

Moulding Plaster

This is made from selected rock and specially prepared for requirements of its use. This is also sometimes called Plaster of Paris. It is used for plaster moulds, ornamental plaster work of all kinds and can be used as substitute for quick set Gauging Plaster. It is generally made as a pure white plaster but in a few localities Grey Moulding is used for special purposes.

Prepared Trowel Finishes

These plasters are gypsum finish plasters manufactured to avoid the problems involved in use of ordinary lime putty finish. They contain no lime but various ingredients are added to produce exceptionally easy working and spreading qualities. Water only is added on the job. They are also known as

(a) Smooth Trowel Finishes
(b) Gypsum Trowel Finishes

Uses of Prepared Trowel Finishes—

These finishes are available as a substitute for lime putty finish whenever desired. They have replaced lime putty finish in some markets. They have the advantage of perfect bond to base, quick setting and freedom from danger of lime burn in decoration. These finishes can be safely decorated in any manner as soon as dry.

They are available in both grey and white.

Sand Float Finishes

These are also prepared gypsum finish with addition of fine sand. For use over gypsum base coat. They are used in markets where the semi-rough surface of a sand float finish is desired. As name implies these materials are "floated," not trowel finished.

They are furnished in both grey and white.

Keene's Cement

This is an exceptionally dense gypsum finish, fundamentally different from all other types of gypsum plasters. Made at Medicine Lodge, Kansas, by Best Brothers, the original and largest manufacturer of Keene's Cement in the country and now operated as a division of National Gypsum Company.

Keene's Cement is made in several different styles with various setting times and with the grind ranging from coarse to super-fine as covered in detail on page 22.

Uses of Keene's Cement—

Keene's Cement is used wherever extremely dense walls are required, such as imitation tile finishes in bathrooms and kitchens or any place where the walls will be subjected to unusual abuse. Also used as a finish coat instead of lime putty, for castings and running moulds, backing up artificial marble, also for the facing of artificial marble and for numerous ornamental plastering effects.

NATIONAL GYPSUM CO. GYPSUM PLASTERS

APPROXIMATE YARD COVERAGE PER TON ON VARIOUS PLASTERING BASES

Type of plaster	Gypsum lath	Gypsum insulating lath	Painted metal lath	Wood lath	Gypsum tile	Brick and clay tile	Concrete surfaces	Bags type weight, lbs.
Neat*	225-240 Sanded 1-2	225-240 Sanded 1-2	105-135 Sanded 1-2	180-210 Sanded 1-2	235-255 Sanded 1-3	165-200 Sanded 1-3	Use Bond Plaster	Paper 100 lbs.
Sand d	75-80	75-80	35-45	60-70	65-70	45-55	Use Bond Plaster	Paper 100 lbs.
Wood Fibered	115-120 Water only no sand	115-120 Water only no sand	56-65 Water only no sand	90-100 Water only no sand	.....	.....	Use Bond Plaster	Paper 100 lbs.
Bond		90 to 120 sq. yds., depending on smoothness of surface of concrete						Paper 100 lbs.
Gauging Plaster		1600 sq. yds. with 2 tons of hydrated lime						Paper 100 lbs.
Prepared Sand Float Finish		250-275 sq. yds.						Paper 100 lbs.
Prepared Trowel Finish		300-400 sq. yds.						Paper 100 lbs.
Keene's Cement		400-500 sq. yds.						Paper 100 lbs.

*Sanded 1-2 equals 1 part of plaster 2 parts sand by weight.
Sanded 1-3 equals 1 part plaster 3 parts sand by weight.

PLASTER PROBLEMS AND THEIR SOLUTION

Gypsum plasters are a highly sensitive chemical product and therefore subject to changes resulting from use under adverse conditions. A knowledge of the effect of these conditions on gypsum plasters as covered by the following table will insure the satisfactory correction of practically all plaster problems which arise:

SLOW SET: If plaster fails to set in 4 hours with all proper precautions.

REMEDIES: (1) Add amount Gold Bond Accelerator (usually handful to the bag is sufficient) necessary to give desired set. Sprinkle accelerator over dry plaster before mixing.
or (2) Add handful screened dry set plaster droppings same manner as accelerator.
or (3) Add alum or zinc sulphate in proportions two ounces per gallon water. (Portland cement is also a good accelerator.)

QUICK SET: If plaster sets in box or before it can be darbied.

REMEDIES: (1) Check to see if mixing box, tools and sand are clean and clean water used.
(2) Use retarder or ground glue in amount needed for desired set.

SHORT WORKING: If mortar works hard, does not carry sand, drops easily from wall.

REMEDIES: (1) See if material is stored in dry place.
(2) Add fresh plaster bag to bag.
(3) Decrease amount sand and water.

PLASTER TROUBLES AFTER APPLICATION

IF PLASTERED WALL IS:	THE TROUBLE IS:	REMEDY:	TO PREVENT TROUBLE IN FUTURE:
Soft, white, chalky particularly over openings. Hot weather condition.	"Dry Out." Plaster dried before setting.	Spray walls with clean water. Keep wet till set.	Screen openings. Wet lath and floors. Avoid thin coats. If plaster slow set use accelerator.
Damp. Soft. Winter condition.	"Sweat Out." Plaster holds water and "rots."	After plaster is set open doors and windows. Supply heat.	Allow ventilation to hasten drying after plaster is set. Supply artificial heat in cold weather.
Soft, resembling sweat out—rooms have been at freezing temperature.	Walls are frozen.	Throw open building. Let walls freeze dry.	Keep walls from freezing until plaster is dry or at least 24 hours.
Soft, not due slow set or hot weather or retempering plaster.	(1) Too much sand. (2) Too fine sand.	None.	(1) Measure sand accurately. Do not use over 3 parts by weight. (2) Use other sand.
Wood lath. Cracks or bulges horizontal with lath. Straight vertical cracks.	Due swelling poor grade of lath or improperly spaced or failure to wet down. Failure stagger joints.	Remove and replaster.	Use No. 1 lath, white pine, cypress or spruce free from bark, sap, or knots. Space ¼" to ⅜" apart. Stagger. Wet lath before plastering.
Gypsum lath. Cracks around joints.	Too thin coat.	Apply second coat.	Use proper grounds.
Metal lath. Sags, cracks, does not adhere.	Too light lath, too open spaces, plaster not double fibered. Plaster over sanded.	Reapply.	Correct conditions mentioned.
Brick or tile. Small cracks.	Failure wet before plastering. Too little sand. One coat work.	Float crack or apply more plaster.	(1) Wet tile before plastering. (2) Use 3 parts sand. (3) Two coat work.
Concrete. Poor bond.	Use of improper plaster. Unprepared surface.	Remove loose plaster. Condition wall. Apply bond plaster.	Surface must be rough, clean. Use concrete bonding coat.

GOLD BOND BASE PLASTERS

With Regard to A. S. T. M. Specifications

National Gypsum Company guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A. S. T. M. Specifications and also every other detail of these specifications. This also applies to Federal specifications.

GOLD BOND CEMENT PLASTER

Neat Plaster for Base Coats—Fibered or Unfibered

Gold Bond Cement Plaster is "neat," not sanded, the sand being added at the job. Each shipment is prepared especially for the locality to which it is shipped and for the sand used in that locality. Fibered with hair or sisal fiber as ordered.

When mixed with sand it spreads well with a uniform working quality and with satisfactory results on the finished wall. On account of the purity of the gypsum it assures the maximum in sand carrying capacity, bulk and workability.

Note: Cement plaster should never be used neat—i. e., without adding sand.

Mixing and Proportions of Sand for Various Bases

After thoroughly mixing with sand, hoe plaster into water and bring to a uniform mix of proper consistency.

Scratch Coat on Gypsum, Wood and Metal Lath

Mix 1 part plaster with 2 parts by weight of dry sand.

On Brick and Gypsum or Clay Tile

Use 1 part plaster to 3 parts by weight of sand.

Brown Coat (Second) for All Plaster Bases

Mix 1 part of plaster to 3 parts of sand.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in 2 coats, scratching well in to fill joints between the lathing units. Brown coat to be darbied lightly and water used sparingly.

On Wood Lath—Soak lath 24 hours before and wet again an hour or two before plastering. Apply in 2 coats using sufficient pressure on scratch coat to obtain good key. Brown coat to be darbied lightly and water used sparingly.

On Metal Lath—Apply in 2 coats. Scratch coat to lightly cover lath and fill mesh. Scratch first coat and allow to set. Then apply brown coat, darby lightly and use water sparingly.

On Brick and Gypsum or Clay Tile—Soak brick or clay tile walls and sprinkle gypsum tile lightly before application of plaster. Apply in 2 coats. Darby brown coat lightly and use water sparingly.

Approximate Covering Capacity and Sanding

Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	225-240 1 plaster 2 sand	180-210 1 plaster 2 sand	105-135 1 plaster 2 sand	165-200 1 plaster 3 of sand	235-255 1 plaster 3 of sand

Full ½ in. grounds should be used for best plaster work.

GOLD BOND SANDED PLASTER

For Base Coats Where Prepared Sanded Plaster Is Desired

Gold Bond Sanded Plaster is the same as cement plaster but is accurately factory mixed and sanded with especially selected and graded sharp sand. It requires only the addition of water and mixing to be ready for use. It is useful for localities where good local sand is difficult to obtain or where accurately mixed material is wanted

Gold Bond Sanded Plaster is also desirable for use during the winter as it eliminates the need for drying sand which is wet and frozen or for trying to secure unfrozen sand.

Gold Bond Sanded Plaster is also useful for remodeling and repair work as it may be mixed inside the building.

Approximate Covering Capacity

Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	75-80	60-70	35-40	45-55	65-70
		No sanding required—add water only			

Application on Various Bases—Gold Bond Sanded Plasters are applied to the various plastering bases in the same manner as for Cement Plaster (see description above).

Mixing—Add nothing but water, hoeing plaster into water and mixing thoroughly. First mix thin, then add dry material to bring to proper consistency.

At Left:
Gold Bond Cement Plaster Bag

At Right:
Gold Bond Sanded Plaster Bag

GOLD BOND BASE PLASTERS (Continued)

GOLD BOND WOOD FIBERED PLASTER

Used for Base Coats Except on Brick and Gypsum and Clay Tile

Unsanded or "Neat" Wood Fibered Plaster is a gypsum plaster containing finely shredded wood fiber and requires only the addition of water to be ready for use. It does not require sand but in some localities 1 part, by weight, of sand is added.

The wood fibered plaster when used unsanded avoids dangers of over-sanding and works and spreads freely and easily. The plaster is about two-thirds lighter in weight than sanded plaster. The wood fiber acts as a reinforcing and produces a dense, tough, strong and durable base, especially for troweling. It is superior in fire resisting and sound deadening qualities to sanded plasters and will stand up where strains and vibrations are encountered. It saws like wood. It is especially adapted for winter work and alterations as it is easily handled.

Sanded Wood Fibered Plaster—Same as unsanded but is shipped factory mixed with proper amount finely graded sand.

Mixing for Application on Various Bases

Hoe plaster into water and allow to soak for 10 to 20 minutes, then mix to the proper consistency.

Scratch Coat—Use "Neat" or Sanded for wood, gypsum lath and metal lath.

Brown Coat—Use "Neat" or Sanded for wood and gypsum lath and Sanded for metal lath.

Note: Do not use either on Brick and Gypsum or Clay Tile.

Application on Various Bases

On Gypsum Lath—Do not wet lath. Apply in coats scratching well to fill joints between the lathing units and scratch surface. Allow first coat to set and dry; then apply brown coat and broom surface before it sets.

On Wood Lath—Soak lath. Apply in coats, applying scratch coat with sufficient pressure to obtain proper key and scratch surface. Apply brown coat and broom surface before it sets.

On Metal Lath—Apply in two coats, applying scratch coat, of stiffer consistency, to cover lath and fill mesh. Apply brown coat and broom surface before it sets.

On Brick and Gypsum or Clay Tile—

Note: Wood Fibered Plaster is not recommended for use on these bases.

Approximate Covering Capacity

Plastering base	Gypsum lath	Wood lath	Metal lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	115-120 Unsanded add water only	90-100 Unsanded add water only	55-65 Unsanded add water only	Not recommended on these bases	

GOLD BOND CONCRETE BONDING PLASTER

For Base Coats on Interior Concrete Surfaces

This plaster is made especially to bond to concrete surfaces, on which ordinary gypsum or lime plasters will not adhere properly. It is used for scratch and brown coats. Only water should be added on the job. Do not use with sand.

All surfaces of concrete must be dry, absolutely clean, free from oil and efflorescence and should be roughened if the surface is troweled smooth.

The plaster should be applied in two thin coats just thick enough to make a smooth wall and not over ⅛ in. total thickness. Any plaster finish may be used over the bonding plaster. The finished surface should not be decorated for a year in order to allow time for any moisture in concrete to work out.

At Left:
Gold Bond Wood Fibered Plaster Bag

Mixing and Application

Mixing—Add nothing but water and hoe plaster into the water, allowing to soak for 10 to 20 minutes, then mix thoroughly to a smooth creamy consistency.

Application—Apply in 2 coats—First coat shall be scratched on as thin as possible, scratched and allowed to dry. Apply second coat just thick enough to level up inequalities, with total thickness not over ⅛ in. for both coats. Scratch the surface of bond plaster thoroughly to provide mechanical key for finish.

Approximate Covering Capacity

Approximately from 90 to 120 sq. yards per ton, depending on roughness of concrete and thickness applied.

At Right:
Gold Bond Concrete Bonding Plaster Bag

GOLD BOND FINISHING PLASTERS

With Regard to A. S. T. M. Specifications

National Gypsum Company guarantees any Gold Bond Gypsum Plaster product to have about double the strength requirements and to exceed by a wide margin the purity required for any special plaster product in the A. S. T. M. Specifications, also every other detail of specifications. This also applies to Government specifications.

GOLD BOND GAUGING PLASTER

For Gauging Gold Bond Lime Putty Finish

Gauging plaster is a specially selected, ground, calcined gypsum used with lime putty plasters to quicken the set of the lime putty and prevent checking of lime finish. Is uniformly ground to a fineness to insure easy mixing and working qualities. Also known as Plaster of Paris. Supplied in following types:

Quick Set or Slow Set

Gold Bond Super White (White).
Gold Bond Sapphire (Grey).

Directions for Mixing

Use as directed under Gold Bond Finishing Lime.

Covering Capacity

Under normal conditions one ton of Gauging Plaster to two tons of hydrated lime by weight will cover approximately 1600 sq. yds.

GOLD BOND PREPARED TROWEL AND SAND FLOAT FINISHES

For White or Sand Float Gypsum Finishes Over Gypsum Base Coats

These prepared gypsum plasters are for use as finish over gypsum base coats in place of lime putty finish. They make a perfect bond with the gypsum plaster base coats. They have exceptionally easy working and spreading qualities, set quickly and walls may be decorated in any manner as soon as they become dry. There is no danger of lime burns in decorations.

Sand Float Finishes contain clean sharp silica sand which has been screened, graded and dried. This sanded plaster is especially recommended for use in winter when it is difficult to secure the proper sand.

Mixing and Application

Mixing—Hoe plaster into water (adding 2 parts of plaster to 1 part of water by volume) and allow to soak for 10 minutes. Mix thoroughly to produce a smooth creamy consistency and add water until very thin.

Trowel Finish—Base coat must be hard and at least half dry before finish is applied. If suction is too great sprinkle base with water. Apply in three coats, the first coat very thin, well scratched into the surface. Allow to draw for a few minutes then lay on second coat and level off. Apply third coat very thin, filling in all imperfections and allow to draw for a few minutes. Then trowel to smooth finish, applying water sparingly with brush and complete troweling before plaster sets.

Sand Float Finish—Gypsum base coat must be hard and about half dry before finish is applied. Trowel on and finish with a float to true and even surface, using water sparingly from a damp brush and complete before finish sets.

GOLD BOND MOULDING PLASTER

Gold Bond Moulding Plaster (Plaster of Paris) is made for use in ornamental plaster work. It is made from selected gypsum rock of greatest purity and whiteness and undergoes special preparations for the purposes for which it is used. The purity of the gypsum deposits of the company allows the production of moulding plaster of the very finest quality. It makes an especially smooth working plaster of uniform set. It is ground finer than other gypsum plasters and permits a finer surface and greater freedom from pin holes.

On account of its hardness and great strength after setting it is used for plaster moulds and ornamental work of all kinds. The plaster sets with little heat resulting in low expansion and contraction, especially desirable when used in moulds. The low temperature does not affect glue or gelatine moulds. It is used for running mouldings, cornices and ornamental use of a similar type as it can be worked so smoothly and produces a perfect, smooth surface.

Mixing Directions

Mix with water only and bring to proper consistency for use.

GOLD BOND PATCHING PLASTER

National Gypsum Company with its years of experience in manufacturing plaster has perfected this easier-working patching plaster. Made of highest quality gypsum and requires only the addition of water. Spreads smoothly and hardens to a rock-like finish without danger of shrinkage. Pure white color. Supplied in 2½, 5 and 15 pound cartons.

BEST BROS. KEENE'S CEMENT PRODUCTS

Made of Selected Gypsum Rock of Exceptional Purity. The Toughest, Most Durable and Whitest Finish Coat Obtainable

MADE of purest gypsum rock, BEST BROS.' Keene's Cement is the whitest finish plaster obtainable and produces a wall with extreme durability. Because of its density it excels for wainscots in kitchens and baths and is also used extensively for the finish coat in auditoriums, public buildings and other places where the walls will be subjected to unusually hard wear or abuse. For running moulds and ornamental plastering effects, BEST BROS.' Keene's Cement has been the "old standby" of plasterers for many years because of its unmatched high quality and uniformity.

(above) Department of Commerce, Washington, D. C., Best Bros. Keene's Cement used for 3¾ miles of corridors in this building because of its greater durability.

TYPES AND USES

Best Bros. Keene's "Regular"

Standard grade for ordinary plastering. It is of good color and fairly coarse grind so as to mix readily with lime putty; has a tensile strength of over 600 lbs. per sq. in. in 7 days; an initial set of 2 hours and a final set of 4 hours.

Best Bros. Keene's "Fine"

Same tensile strength and setting time as the "Regular" grade but is ground finer and is of uniform purity of color, being made from hand picked rock. Used for backing up artificial marble; for making caen stone; for various other effects in ornamental plastering; and, occasionally, for finish coat.

Best Bros. Keene's "Fast Finish"

Manufactured specifically for a smooth finish coat, and is made to set up more quickly than "Regular" grade when mixed with lime putty. Designed to overcome the long interval of time that has previously been necessary between the application and the final troweling of a Keene's Cement finish. It is ground the same as the "Regular" grade; has a job set of 2 hours; and a tensile strength of over 500 lbs. per sq. in.

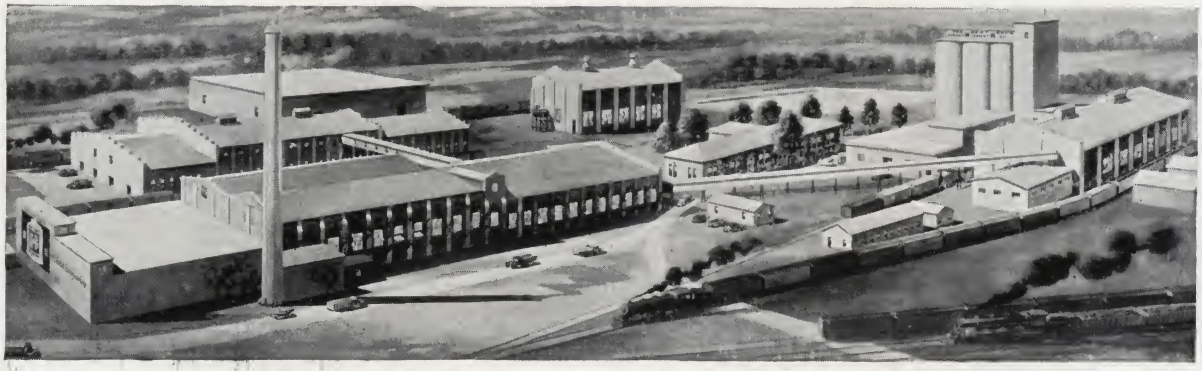
Best Bros. Keene's "Quickset"

Designed specifically for castings, running mouldings, precast travertine, and similar purposes where the material is used neat and has to set in the shortest time. It is finely ground; of pure white color; has an initial set of 20 minutes and a final set of 35 to 40 minutes. Tensile strength, 600 lbs. per sq. in.

(below) Hospital rooms must be able to "take it." Best Bros. Keene's Cement is invariably the choice of architects and contractors because of its proven durability for the past 50 years.

Best Bros. Keene's "Superfine"

This grade is used only for the facing of artificial marble. It is very slow setting, having an initial set of 4 hours and a final set of 8 hours. It is pure white and very finely ground.



Medicine Lodge, Kansas . . . The mammoth plant of Best Bros., oldest and largest manufacturer of Keene's Cement in the country. Now operated as a division of National Gypsum Company.

GOLD BOND FINISH LIME

Gold Bond Lime from Famous Ohio Lime Country

The very finest lime deposit in the world is that in the northwestern Ohio dolomite lime fields. This is located a few miles south of Toledo and by far the largest quantity of finish lime produced in the country comes from producers located within an area of a radius of about five miles.

Gold Bond Lime is produced in this area at our plant at Luckey, Ohio, and the purity of the lime ranks with the finest produced in this high quality lime producing section.

The Quality of Dolomite Limestone

The chemically pure dolomite limestone contains 45.5% magnesium carbonate and 54.5% calcium carbonate. A. S. T. M. specifications require a 95% minimum oxides of the two combined. The Gold Bond deposits average between 98% and 99% containing 55.56% Calcium Carbonate and 43.41% Magnesium Carbonate.

It is the magnesium carbonate, when properly burned which gives the plasticity and easy slip or working qualities of a building lime. It is due to the quality of plasticity that the dolomite lime is so favored by the trade. Limes of high calcium content are not as easily worked as the Ohio dolomite lime.

Automatic and Machine Controlled Burning of Lime

One of the important steps in the production of good lime is in the proper burning of the magnesium carbonate. As the calcium and magnesium carbonate require widely different temperature to change them to oxides by burning, it requires very careful regulation of heat. The National Gypsum Company has patented and installed apparatus which definitely controls the burning automatically as against depending on the skill of a fireman in control of his fires, so that overburning is a practical impossibility. Overburning makes the lime tough and hard working without "slip" and will not hold its water against the suction of the wall.

Hydration Scientifically Controlled

The process of hydration is also absolutely and automatically controlled by the equipment of this company. Lime as it comes from the kiln exists as calcium and magnesium oxides. A definite percentage of water is added which combines chemically with the calcium oxide but *not* with the magnesium oxide. The lime is then ground and sacked.

The Reason for Soaking Lime Overnight

The small amount of water used in hydration does not combine with the magnesium oxide. When soaked overnight, the magnesium oxide slowly reacts and forms a "jelly" which produces the slip and easy working qualities of the Ohio dolomite lime. It will therefore be readily seen that the more perfect the hydration of the magnesium the greater the plasticity of the lime.

Plasticity the Test of Quality of Gold Bond Lime

One of the most important tests of lime is that of its plasticity. In the Federal Standard Stock Catalogue, SS1L-351, Section IV, Part 5, E-6, it requires that finishing hydrated lime shall have a plasticity figure of not less than 200. The minimum value which our plant specifications allow to be shipped as finish lime is 300.

Mixing Gold Bond Finish Lime—Fill water tight box about two-thirds full of clean water. The dry lime should then be sifted gradually into the water until fully soaked. Enough excess water to provide 1 to 2 in. of water over the lime should be supplied. Soak overnight. In application, mix 3 parts of lime putty by 1 part of dry gauging plaster by volume. Mix thoroughly.

Covering Capacity—Under average conditions, the proportions specified should cover approximately 500 to 700 sq. yds. per ton of lime. Shipped in 50 lb. paper bags.

GOLD BOND MASON'S LIME

A hydrated lime for use with lime cement and sand, or lime and sand mortars, or for concrete construction. Used by mason contractors wherever a good easy working lime, which will bulk well in putty is required. Shipped in 50 lb. paper bags.

Gold Bond Finish Lime Bag.

Gold Bond Mason's Lime Bag.

GOLD BOND COLOR TEXTURE

A Plastic Texture Finish for Walls and Ceilings That Is Supplied Already Tinted . . . Six Pastel Shades and White . . . For Use Over Practically Any Surface . . . The Ideal Decoration for Gypsum Wallboard

Beautiful Textured Walls at Low Cost

The artistic richness of textured interiors often gives the impression that they are expensive. Instead, the cost is invariably even less than wallpaper when genuine Gold Bond Color Texture is used, for this reason: In new construction, Color Texture is applied directly over the base plaster, eliminating the lime putty or white finish coat. In addition, the cost of wallpaper or other decoration is also saved.

Another important item—textured walls are permanent whereas papered rooms have to be done over every few years. For actual beauty, there is no comparison between textured rooms with their interesting designs and wallpaper with its monotonous patterns repeated over and over. The most expensive wallpapers are often mere imitations of texture designs.

Greater Coverage with Color Texture

Two important advantages contribute to make Gold Bond Color Texture the most popular texturing material and incidentally, the most economical. First, it comes already colored and requires no further decoration. Second, it is a casein base product with outstanding texturing qualities and dries to a hard, durable finish. Coverage is double that of many textures because only a thin coating is required for even the most elaborate texture designs.

Easy Application

Gold Bond Color Texture is simply mixed with water; applied with paint brush or trowel in a thin coat—$\frac{1}{16}$ to $\frac{3}{32}$ in. thick; then textured with stipple brush, rubber sponge, whisk broom or crumpled paper. A direction sheet is enclosed in each carton giving specific instructions for application over practically every type of surface.

Six Colors

Color Texture comes in Ivory, Light Cream, Light Buff, Light Green, Pink, Light Blue and White. For special color schemes, White Color Texture is used and decorated to suit with Gold Bond Casein Paint (see page 26) . . . Color Texture is supplied in 10 and 25 lb. cartons.

Easily Cleaned

Color Texture interiors can be kept clean and fresh-looking by going over the surface lightly with a damp cloth. . . . Caution! Not all texturing materials can be cleaned this way. Color Texture can because of its casein base.

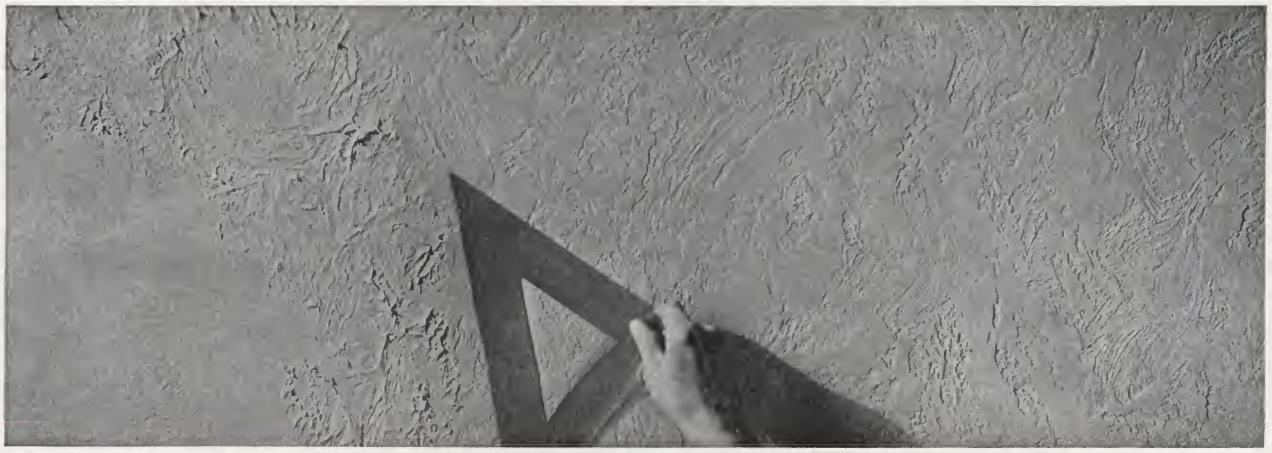
Charming textured interiors in light tints are always warm and inviting. In complete harmony with any type of architecture; any style of furnishings.

Typical Designs Produced With Gold Bond Color Texture

The Progressive Steps to Secure the Finish Are Shown from Left to Right

No. 1 Fine Stipple
Gives the effect of a sand finish. Apply thin coat of Color Texture with trowel or paint brush. Smooth to uniform thickness with trowel. Texture with a fine stipple brush, cleaning brush occasionally to insure uniform texture. Surface may be sand papered if desired to remove any sharp points.

No. 2 English Trowel Finish
A light trowel finish showing marks of trowel. Apply thin coat with trowel or paint brush. Then trowel surface lightly, using back edge of trowel in a curving upward stroke to secure this effect. If stronger texture is desired apply Color Texture thicker and use more pressure when drawing the trowel.



No. 3 An Interesting Texture
This has effect of considerable movement. Apply thin coat of Color Texture with trowel or paint brush. Then add heavier texture with rubber sponge, using face of sponge in a slightly swirling up and down motion. Drag triangle lightly over surface to create high-lights.

NATIONAL GYPSUM COMPANY

GOLD BOND CASEIN PASTE PAINT

A Full Line of Quality Interior Paints that Require Only the Addition of Water as a Thinner . . . Easier to Apply . . . High Light Reflection Without Glare . . . Pastel Tints and Deep Colors

Gold Bond Casein Paint brings new color and beauty to modern interiors at a real saving in time and money. Every day, more decorators are swinging over to this remarkable interior paint which offers all these advantages:

Lime-proof Colors
Won't "yellow" with age
Takes water as a thinner
Dries in an hour
No turpentine odor
Better hiding power
High light reflection
Use with brush or sprayer
Non-inflammable
Costs less

For Jobs in Every Price Range

Quality alone has prompted the use of Gold Bond Casein Paint in the finest homes in the land; theatres, hotels and public buildings. Yet, the surprisingly low price permits its use for all kinds of interior painting jobs including factories, lofts, cheap apartments, public garages.

Important! Because water is used as a thinner, do not confuse Gold Bond Casein Paint with calcimines or "cold-water paints."

One Hour Drying . . . No Turpentine Odor

Restaurants, bakeries and food stores of all kinds used to dread painting because the strong turpentine odor simply "killed" business. Now they can decorate with Gold Bond without fear of driving away customers because there is no turpentine after-smell. . . . Hotel rooms can be repainted in the morning and occupied the same night.

High Light Reflection Without Glare

The high light reflection of Gold Bond Casein Paint is of utmost importance in offices, stores and factories, where better lighting means greater efficiency. White Gold Bond Casein Paint reflects well over 90% of the light striking it and the colors rate correspondingly high. Lighting bills are cut as much as 30%.

Meets Government Specifications

Gold Bond Casein Paint meets Government specifications TT-P-23 Type 2.

Mixing

Use a clean, rustless (preferably new) galvanized pail or tub. Avoid wood containers. Add water to the paste in small portions with thorough stirring after each addition until the desired consistency is obtained. Under average conditions, one gallon of Gold Bond Casein Paint takes two quarts of water. In cold weather or over extremely porous bases, more water may be required. Much time can be saved in applying by using a wide brush.

Note the contrast between the painted portion of this auditorium ceiling and the barn-like appearance of the section still to be done. . . . Doesn't require much imagination to figure what the saving in lighting cost will be.

Superintendents of many hotels and office buildings use Gold Bond exclusively to keep rooms looking smart and inviting. . . . They report, "It's cheaper than washing walls and much quicker."

Nine Pastel Colors and White

Gold Bond Casein Paint is made in White, Old Ivory, New Cream, Buff, Rich Tan, Sky Blue, Pearl Grey, Old Rose, Deep Orchid, Green. Supplied in quart and gallon cans, also in 5-gal. and 30-gal. drums.

Tinting

For special colors, use White Gold Bond Casein Paint and tint with Gold Bond Deep Colors. The latter colors are concentrated and made especially for tinting purposes (described below).

GOLD BOND DEEP COLORS

Concentrated Casein Colors for Tinting White Gold Bond Casein Paint . . . Also Used Full Strength for Deep Color Combinations

Gold Bond Deep Colors are concentrated casein paints in paste form. Made of pure color pigment, ground in casein and supplied in eleven brilliant colors, also black and white. They are used for three distinct purposes: as tinting colors for White Gold Bond Casein Paint; as fine interior paints by simply adding water as a thinner; as artists' colors for showcards, advertising displays and window backgrounds . . . supplied in half pint glass jars, also quart and gallon cans.

Eleven Colors, Black and White

Bright Red, Orange, Yellow, Emerald, Blue, Violet, Indian Red, Ochre, Burnt Sienna, Raw Umber, Burnt Umber, Black, White.

GOLD BOND PIGMENTED PRIMER

An Oil-Base Primer for Use Under Gold Bond Casein Paint, Oil Paints, Calcimines and Textures

Surfaces with excessive suction or uneven absorption should always be given a coat of Gold Bond Pigmented Primer before painting. It "kills" suction and provides a smooth, even base for the paint. Saves the danger of a streaked or spotty job and makes the paint go farther as it actually serves as a first coat. Supplied in quarts, gallons, and 5-gal. cans.

GOLD BOND LIME PROOF MORTAR COLORS

The Gold Bond line comprises a full assortment of highest grade, non-fading, Lime Proof Colors used for tinting Gold Bond (white) Color Texture, Craftex, stucco, mortar and other water mixed materials.

As all Gold Bond Lime Proof Colors are full strength, only small quantities are required for the average job. Accordingly, they are supplied in small, air-tight containers in the following colors:

Red (1½ lbs.)	Black (1¾ lbs.)	Yellow (¾ lb.)
Blue (1 lb.)		Raw Sienna (1¼ lbs.)
Green (1¾ lbs.)		Burnt Sienna (1¼ lbs.)
Raw Umber (1 lb.)		Burnt Umber (1¼ lbs.)

Packed 24 cans to the case.

Note: All containers are the same size. The difference in weights is because of the varying densities of the colors.

Mixing

Mix the dry color with a little water and stir thoroughly to form a thin paste. Strain this mixture through a fine mesh screen to remove lumps. Then add to the wet mortar, texture, or other material to be colored.

Important! When adding color to the wet mix, keep in mind that the tinted material when dry will be lighter in color.

MASTER SPECIFICATIONS FOR INTERIOR LATHING AND PLASTERING

GENERAL NOTES

Uses of Master Specifications

It is intended that the following specifications will cover practically all conditions which are usually met with in ordinary construction. Only the paragraphs applying to the particular type of job should be selected and used by the architect. Special lathing bases are not included and if these are used the method of application and use of plaster should follow the recommendations of the manufacturer.

Consulting Service on Lathing and Plastering

The National Gypsum Company has over two hundred representatives located throughout its territory who will be glad to consult with architects and lathing and plastering contractors on any lathing or plastering problems which may arise. This is in addition to the technical laboratory and research department located at the Buffalo Office which may be called upon at any time for technical information.

New and Old Work

The following specifications are written only for new work. For alteration work the clauses will have to be altered to cover such work especially in regard to where old and new work join.

SECTION 1

LATHING AND PLASTERING SPECIFICATIONS

Note: (a) Acoustical Plaster—See File Index for specifications on Gold Bond Trowel Finish Macoustic.

(b) If trade practice requires separate specifications for lathing and for plastering, the specification should be written accordingly.

1. General Conditions

The General Conditions of the Contract of the American Institute of Architects (current edition) shall form a part of this specification. (If the A.I.A. Standard Form is not used then refer to the one used.)

2. Scope

2–1. This contractor shall furnish all materials, labor, scaffolding and staging which will be required to satisfactorily complete the lathing and plastering work to be executed as hereinafter described or indicated on the contract drawings or schedules.

3. Extent of Work—Furring, Lathing and Plastering

3–1. All Metal Furred or Suspended Ceilings

Note: Wood furring or hung ceilings should be specified under carpentry.

3–2. All metal wall furring and miscellaneous metal furring

3–3. All metal stud partitions

3–4. All lathing

3–5. All interior plastering including Keene's Cement as follows:

Note: Here describe exceptions and amplifications in regard to lathing and plastering or refer to schedule of finishes and drawings.

- **a.** Note where plaster is to be omitted.
- **b.** Note where one or two coat plaster is required.
- **c.** Note where white finish is omitted.
- **d.** Note ceiling or beams, cornices, etc., to be furred (Type furring)
- **e.** Note walls to be furred (Type furring)
- **f.** Note if lath or base and scratch coats back of tile work, marble or slate are to be included or omitted from this contract.

4. Relations with Other Trades

4–1. Temporary Enclosures — Temporary cloth enclosures over all window and other exterior openings throughout the portions of the building to be plastered shall be provided and maintained by the carpenter during application and drying of plaster.

4–2. Temporary Heat, Light and Water—Shall be supplied by others.

Note: Plastering Contractor or General Contractor may be required to supply salamanders, fuel, heat and maintenance without fire hazard before heating plant is installed, depending on contract agreements. After heating system is installed heat may be supplied by heating system through the General Contractor or Owner.

4–3. Grounds and Furring—All necessary wood grounds for furring and lathing shall be installed by others.

4–4. Inspection of Grounds and Plastering Bases—All grounds and plastering bases shall be inspected by this contractor from time to time and before commencing his work and he shall report to the Architect and General Contractor any defects in such work which may in his opinion affect satisfactory finish, accuracy and stability of the work under his contract.

4–5. Failure to report such defects requiring correction or replacement before commencing his work shall be construed as acceptance of such work by this contractor and he shall not be relieved of responsibility and obligation under his guaranty.

5. Protection of Work and Building

5–1. All finished work, such as woodwork and glass, shall be adequately protected by Contractor from damage and plaster droppings and he shall make good such damage at his own expense and without cost to the owner.

5–2. Furnish, install and maintain waterproof protection at source of water, under all mixing boxes and gauging barrels.

5–3. Any spill or drip of any kind shall be taken up at once and any sand, sawdust or protection for floor if removed shall be replaced with new material.

5–4. This Contractor shall be responsible for all damage occasioned by the mixing, handling and storing of mortar and materials or through his failure to provide necessary protection.

6. Patching

6–1. All plaster work which is damaged by this Contractor shall be made good by him at his own expense.

6–2. After the erection of finish by other trades, this Contractor shall patch all plaster which is damaged by other mechanics but the cost shall be paid for by the Contractor who caused the damage.

6–3. This Contractor shall cut out, when required, any defect in his work and replaster and leave in perfect condition.

7. Preparation of Surfaces

7–1. This Contractor shall clean the surface to which or against which plaster is to be applied, removing all mortar droppings, etc., as may be necessary, to allow plaster to adhere to same.

7–2. Concrete surfaces and combination tile and concrete surfaces which are too smooth to receive plaster shall be sufficiently roughened by hacking to secure adequate bond.

Note: (Hacking will be done by others.) Concrete forms should be made of rough boards and be free from oil.

7–3. Concrete surfaces shall be dry and brushed free from dust, soot, grease and oil. (Burn off oil or grease with torch.) Any low places in masonry walls shall be filled out and any unevenness shall be straightened with unfibered plaster ahead of base coat.

7–4. Efflorescence shall be removed with a wire brush and washed with muriatic acid and water, one (1) to five (5) solution. Remove acid by thorough washing with clean water.

7–5. Wood Lath shall be wetted down as specified under Wood Lath, Sec. 5, Par. 1-1-1.

7–6. Gypsum lath and fiber insulating lath shall not be wetted down at any time.

7–7. Where necessary for suction, wet brick, concrete and clay tile surfaces before plastering.

8. Wood Grounds

All wood grounds shall be provided and installed by the Carpenter and shall be of such thickness and so set to provide for ½ in. thick plaster over all types of laths and gypsum tile and ⅝ in. thick plaster over all brick, clay tile and other masonry.

Wood Lath	¾ in. grounds
Gypsum Lath ⅜ in. thick	⅞ in. grounds
Insulating Board ½ in. thick	1 in. grounds
Metal Lath—Expanded, Sheet and Wire	¾ in. grounds
Gypsum Tile	½ in. grounds
Brick and Clay Tile	⅝ in. grounds

Note: Thickness of grounds includes thickness of lath.

9. Sample Finishes

Where special textured finishes are required, this Contractor before proceeding with the work shall prepare and erect, where directed by the Architect, sample panel of each finish required, not less than 3 ft. square. These samples shall be made to the satisfaction of the Architect. After approval by the Architect, the finished work shall equal the samples in all respects.

10. Workmanship

All work shall be executed by skilled workmen in such a manner as to fulfill the requirements of the drawings and specifications.

11. Cleaning

11–1. After completion of his work, this Contractor shall remove from the building all scaffolding and tools of every sort used by him, taking care not to damage work of the other trades.

11–2. All plaster rubbish, plaster droppings, etc., shall be removed by this Contractor and the building left broom clean.

11–3. (This Contractor shall remove all plaster from glass and other finish and leave in first class condition.)

11–4. (The removal of debris and cleaning required, resulting from the work of the Contractor, shall be done by others.)

12. Guarantee

12–1. This Contractor shall furnish a written guarantee as a part of this contract, warranting all work and materials under this contract against defects for a period of (one year) (specifying time) from the completion and acceptance of the work as shown by date of final payment and he binds himself to repair and replace any defect which may develop within that period, without additional payment beyond the amount of the contract, when ordered to do so by the Owner or the Architect.

12–2. (This shall also include the cost or repairs or replacement of any material, decoration or other finish damaged by the defects.)

SECTION 2

FURRING AND SUSPENDED CEILINGS

(Specifications for Gold Bond "Clip-on" Systems—Suspended Ceilings and 2-in. Solid Partitions are given in detail in separate books sent gratis upon request.)

1. Wood Furring and Suspended Ceilings

Note: Wood furring and suspended ceilings which are to be plastered should be included under Carpentry.

2. Masonry Furring

Masonry furring such as hollow blocks of tile, etc., should be included under Masonry.

3. Materials

3–1. Metal Furring—Shall be Gold Bond Cold Rolled Channels. (See page (10).)

3–2. Metal Partition Studs—Shall be Gold Bond Cold Rolled Channels of sizes specified.

4. Metal Furred Suspended Ceilings

4–1. Location—Ceilings shall be furred or suspended with metal furring where so indicated on plans or on schedules. Where finished surfaces of plastered ceilings are six (6) in. or more below the soffit of floor construction, they shall be considered as suspended ceilings.

4–2. Hangers—Shall be placed not to exceed 4 ft. center to center in either direction. The minimum size for hangers shall be No. 8 galvanized wire, 1 x $\frac{3}{16}$ in. flats or $\frac{7}{32}$ in. round mild steel rods.

The upper ends of hangers if wire, rods or flats, shall be of sufficient length to wrap around beams or provide a suitable anchorage in concrete or tile. Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured. When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear

through tile and secured on upper side by steel rod or toggle bolt.

4–3. Runner Channels—Shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. cold or hot rolled channels weighing not less than 442 lbs. per thousand lineal feet. Lower end of wire hangers shall be secured to runner channels by three twists around same; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than ⅜ in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

4–4. Furring Channels—Shall be not less than ¾-in. channels with a minimum weight of 276 lbs. per thousand lineal feet; they shall be erected at right angles to the runner channels of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

Furring channels shall be spaced as follows:

Not over 12 in. apart for 3.0-lb. flat expanded metal lath is used, or over 16 in. apart for 3.4-lb. flat expanded metal lath; not over 16 in. apart for 3.0-lb. flat rib expanded metal lath; not over 19½ in. apart for 3-lb. ⅜-in. rib expanded metal lath; and not over 24 in. where 3.4-lb. ⅜-in. rib expanded metal lath is used.

4–5. Metal Lath—Shall weigh not less than 3.00 lbs. for ceiling and 2.50 lbs. per sq. yd. for side walls, provided, however, that minimum weight shall be governed by spacing of furring channels as specified in the preceding paragraph.

The metal lath shall be wired to the furring channels (the long dimension of the sheet being across the channels) by No. 18 gauge galvanized annealed wire every 6 in. along the furring channels; there shall be one tie on side laps half way between channels. Lap sheets at sides and ends not less than 1 in.

Where ceilings, cornices or other features, formed with metal lath, finish against masonry walls, partitions or arch soffits, the lath shall extend onto masonry surface at least three (3) in.

4–6. Brackets for cornices, beams, etc., shall be built up of 1-in. steel members spaced same as for runner channels and shall be securely fastened to masonry or other structure supports. Cross fur and lath same as for ceilings.

5. Metal Stud Partitions

5–1. Solid Partitions—

(a) Metal Studs for solid partitions shall be not less than ¾-in. cold or hot rolled channels weighing not less than 276 lbs. per thousand lineal feet, and spacing of studs shall conform with weight of lath as in paragraph (a) of these specifications.

(b) Studs shall be secured in position by inserting ends in holes punched ¾ in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals; on floors by wire-tying to nails driven 1 in. into floors and projecting at least 1 in. above. Where metal lath ceilings are used, a small hole shall be made in the ceiling lath and the end of channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(c) Splicing of studs shall be made by lapping channels not less than 8 in. with flanges interlocked and tied.

(d) Erection of metal lath, for solid lath and metal stud partitions, shall be the same as that given in Par. (1) excepting that metal lath is applied only on one side of channel studs and tied instead of nailed or stapled.

(e) Note: Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(f) In every case one channel shall be set next to wood buck at each side of openings and double-wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

5–2. Hollow Metal Lath Partitions—Use Specifications (5-1) but call for wide single channel, or a double row of ¾-in. channels with separators every 2 ft. vertically, and metal on both faces of partition.

6. Metal Wall Furring

6–1. Where wall furring is indicated on plans or in schedule for walls, beams, girders and other vertical surfaces, it shall consist of ¾-in. vertical channels spaced not more than (specify spacing) (12-in.) on center and shall extend from floor to ceiling arch and be firmly secured top and bottom. Intermediate braces shall be provided as specified for metal stud partitions. Flanges shall face masonry and shall be secured with special hook nails or other device best suited to the masonry or mortar joints.

6–2. Pipe and Ducts—Pipe and ducts required to be enclosed shall be furred as specified for wall furring. Where required to support plumbing fixtures, additional horizontal members of 1½ x $\frac{3}{16}$ in. flats shall be wired to vertical members at proper heights to support fixtures.

6–3. Pipe Chases—Over 12 in. wide shall be furred in same manner as wall furring with metal lath extending at least 3 in. each side of opening.

6–4. Heads and Jambs—Fur and lath heads and jambs of windows and doors, when specified or indicated to be plastered, in same manner as for wall furring.

6–5. Corner Beads—Corner beads shall be installed on all exterior angles in plastered rooms or spaces to run from floor to metal corner bead or to spring line of arches where arch heads are used and shall be of type and gauge as specified under materials.

6–6. Metal Grounds—Shall consist of heavily galvanized steel and shall be set true to plane of finished wall surface and shall be securely fastened to the masonry, furring or other support.

6–7. Miscellaneous Furring—(List here other miscellaneous furring required as for stair soffits and any special features requiring metal furring and lathing.)

6–8. No furring shall be placed until all pipes, conduits, etc., have been permanently placed.

6–9. General—All furring and lathing, for all vertical or horizontal surfaces for walls, cornices, beams, arches, carved work, etc., shall be level, plumb true and rigid and accurately formed so that all surfaces to receive plastering shall be generally one (1) inch back of finished surface.

SECTION 3

LATHING AND PLASTERING ACCESSORIES

1. Materials

1–1. Wood Lath—Shall be No. 1 Grade, or better, free from knots, sap and bark, approximately ⅜ in. thick, 1½ in. wide and either 32 in. or 48 in. long.

1–2. Gypsum Lath—Shall be Gold Bond Gypsum Lath ⅜ in. thick (or ½ in. thick)—16x48 in. (or 16x32 in. or 16x36 in.).

1–3. Metal Lath—Shall be Gold Bond Metal Lath, National Gypsum Co. (specify type, finish and weight for spacings on both horizontal and vertical installations). See pages 17 and 18 for metal lath.

Recommendations of Associated Metal Lath Manufacturers, Inc., follow:

1–4. Minimum Weight of Metal Lath—

(a) *Expanded Metal Lath for Interior Work—*

For vertical position, partitions, etc., attached to metal supports 12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively, except for solid partitions where 2.2 lath may be used on 12-in. spacing; and 3.4 lath on 16-in. spacing. For nailed-on partitions, maximum spacing shall be 16 in. for all flat laths, minimum weight to be .....2.5 lbs.

For tied-on ceilings attached to metal supports, maximum spacing shall be 12 and 13½ in. for 3.00 and 3.4 lb. flat lath; for nailed-on ceilings, maximum spacing shall be 16-in. for these laths.

(b) *Flat Rib Lath—*

For Nailed or Tied-on Partitions and Furring:
For supports spaced not to exceed 16 in. on centers.....2.75 lb.
For supports spaced not to exceed 19 in. on centers.....3.0 lb.

For Nailed or Tied-on Ceilings:
For supports spaced not to exceed 12 in. on centers.....*2.75 lb.
For supports spaced not to exceed 16 in. on centers.....3.0 lb.
For supports spaced not to exceed 19 in. on centers.....3.4 lb.

*For nailed-on ceilings, this lath may be used 16 in. on centers.

(c) *⅜-in. Rib Lath—*

For Nailed or Tied-on Partitions and Furring:
For supports spaced not to exceed 19 in. on centers.....2.5 lb.
For supports spaced not to exceed 24 in. on centers.....3.0 lb.
For supports spaced not to exceed 31½ in. on centers.....4.0 lb.

For Nailed or Tied-on Ceilings:
For supports spaced not to exceed 19 in. on centers.....2.75 lb.
For supports spaced not to exceed 24 in. on centers.....3.0 lb.
For supports spaced not to exceed 31½ in. on centers.....3.4 lb.

1–5. Cornerite—Shall be Gold Bond Cornerite.

1–6. Corner Beads—Shall be Gold Bond Corner Bead (specify type).

1–7. Base Screed—Shall be Gold Bond Base Screed (specify type).

1–8. Picture Mould—Shall be Gold Bond Metal Picture Mould (specify type).

1–9. Metal Plaster Arches—Shall be Gold Bond Metal Plaster Arches (specify type).

2. Application of Wood Lath

2–1. General—Lath with wood lath all (exterior stud walls) (wood furred walls) (stud partition) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered.

Note: It is recommended that ceiling over furnace and fuel room be lathed with gypsum lath or metal lath for fire protection or at least for a distance of 5 ft. beyond all sides of the furnace. Also stud walls enclosing furnace room.

2–2. All lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart, a space of ¼ in. being left between abutting ends and shall be secured at each bearing with 3d lathing nails, using two (2) at each end and one (1) at each other bearing.

2–3. Lath shall be applied at right angles to the supports and joints shall be broken at not more than every seventh lath. No laths shall be carried from room to room. No lathing shall form long vertical joints or be set vertically to fill out at angles or corners.

2–4. Reinforce all re-entrant angles with Gold Bond expanded metal Cornerite and metal corner beads on all exterior angles. All strips shall extend at least 4 in. on each wall and shall butt at ends and not lap and shall be securely nailed or stapled at edges but not in corners.

2–5. Corner Beads—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

2–6. Where wood lathing on walls, partitions or ceilings abut masonry work, strips of painted metal lath, extending at least 4 in. on each side of the intersection shall be securely fastened. Lath shall weigh not less than 2.5 lbs. per sq. yd.

2–7. Where heat pipes are concealed in walls or partitions, they shall be lathed over with strips of Gold Bond Gypsum Lath or Gold Bond Painted Expanded Metal Lath nailed securely to nearest supports.

2–8. Openings or where studs are spaced over 16 in. wide, as back of medicine cabinets, etc., shall be lathed with expanded metal ribbed lath.

Note: Add here any other special condition requiring metal lath, such as back of tile wainscot, etc.

2–9. Grounds for use with wood lathing shall be ¾ in. thick, including thickness of lath and shall be installed as specified under Carpentry.

3. Application of Gold Bond Gypsum Lath

General—

3–1. Lath with Gold Bond Gypsum Lath all (exterior stud walls) (wood furred walls) (stud partitions) (ceiling beams or joists) (stair soffits), etc., which are specified to be plastered.

3–2. Nailing edges of lath shall have at least ⅝ in. bearing on all studs, joists, etc., the length of the lath laid at right angles to studs. Horizontal joints shall abut, breaking joints in each course. Vertical joints of wall shall be staggered with ceiling joints so they do not meet. Vertical joints on opposite side of partition shall be staggered and not occur on opposite sides of the same stud.

3–3. Nails shall be 3d 1⅛-in., 13 gauge, ⅜-in. head, blued lathing nails spaced approximately 5 in. apart using 4 nails to each stud—16 nails to a 16 x 48 in. panel. First nail about ⅜ in. from edge of panel. Nail center bearing first, then outer edges.

3–4. Fit lath tight together at all re-entrant angles and corners. Fit lath accurately around all electric boxes and similar openings. Cutting shall be done with sharp hatchet or knife and then breaking over a straight edge.

3–5. Where any gypsum lathed wall, partition or ceiling abuts masonry, strips of Gold Bond Reinforcing Mesh or Gold Bond Expanded Metal Lath weighing 2.5 lbs. shall extend at least 6 in. on masonry and 6 in. on gypsum lath, fastening edge to masonry and to gypsum lath.

3–6. All re-entrant angles shall be reinforced over the gypsum lath with Gold Bond Cornerite extending 3 in. each side. Ends shall abut and not overlap.

3–7. All grounds for gypsum lath shall be ⅞ in. thick (including thickness of lath furnished, installed and specified under Carpentry).

4. Application of Gold Bond Gypsum Lath, Perforated or with Aluminum Foil Insulation

Same Specifications as for standard Gold Bond Gypsum Lath.

5. Application of Gold Bond "Floating Wall" System

See page 6 for specifications.

6. Application of Gold Bond Metal Lath

6–1. General—Lath with expanded metal lath all studs and beams for (interior stud walls) (wood furred walls) (stud partitions) (ceiling beams) (furred or suspended ceilings) (stair soffits).

6–2. Application to Wood Supports—Metal lath shall be nailed to wood supports and nails shall be not less than 4d or 6d nails or 1¼ in. in No. 14 gauge wire staples driven to a penetration of not less than ⅞ in. and 1 in., respectively, and fastened every six (6) in. along each support. Side joints shall be wired once between supports.

6–3. All rib lath shall be fastened at all ribs to each support and shall be wired at edges once between supports.

6–4. All metal lath shall be fastened to masonry with special hardened steel nails, self-clinching nails or other device best suited to type of construction.

6–5. Attachment to Metal Supports—Metal lath shall be wired to metal supports at intervals not exceeding 6 in. with not less than No. 18 gauge galvanized soft annealed wire and shall always be tied where sheets lap at channels and at edges once between channels.

6–6. Metal Lath shall be erected with the long dimension of lath across the supports; rib lath with the ribs against the supports.

6–7. Lath shall be first applied to ceilings and the sheets carried down 6 in. on side walls and partitions. If metal lath is not used on the ceilings, the lath shall start at the top of the wall and be bent and carried 6 in. on to the ceiling joists so that no joints shall occur at intersection of ceiling and walls.

6–8. On walls, lath shall be started on one stud away from the corner, be bent into corner and carried onto the abutting wall so as to avoid a joint at juncture of walls. Where ⅜-in. ribbed lath is used on ceilings or walls, it shall be butted into all joints, and strips of lath not less than 8 in. wide shall be bent into the shape of an "L" (Cornerite) 4 in. on each side and shall be securely wired along each edge of the sheet but not in corner.

6–9. Where any wall, partition or ceiling abuts masonry, the metal lath shall extend onto masonry at least 6 in. and be well fastened at edges to joints of the masonry.

6–10. Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to supports. Nails or staples shall be so placed that they occur where sides of sheets lap at supports.

6–11. Expanded metal shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

6–12. Ribbed lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

All grounds for metal lath shall be ¾ in. thick including the lath and will be furnished and installed as specified under Carpentry.

Note: The metal lath specifications have been adapted from those of the Associated Metal Lath Manufacturers, Inc.

Note: No attempt has been made to include specifications for woven wire lath and many other forms of lath. For these, see Manufacturers' Specifications.

7. Metal Arches, Base Screeds, Corner Beads, etc.

7–1. Metal Plaster Arches—Gold Bond Metal Plastering Arches of the No. and shape as noted hereinafter or on the drawings, shall be securely set in position over the lath in accordance with the details. Corner beads at jambs shall join arch beads accurately without break.

7–2. Corner Beads—All external corners, both vertical and horizontal, shall be protected with corner beads, of the types or type specified for their full height or length; same to run from top of base to ceiling, heads or beams or to the spring line of arches.

Note: If beveled, chamfered or rounded corners are desired, make note where these will occur and change paragraph above.

7–3. Metal Picture Moulds—Gold Bond Metal Picture Moulds shall be installed in the following locations. *(List here, or in schedule of finishes, or on drawings, spaces to have picture mould.)*

Picture moulds shall be accurately set, true and parallel with ceiling line and substantially secured.

7–4. Metal Base Screeds or Wainscot Cap—Gold Bond Base Screed shall be installed in the following locations, *(List here, or in schedule of finishes, or on drawings, spaces to have base screed for base, wainscot cap, etc.)*

Note: Where special items such as metal bases, with or without electric wire ways; chair rails; door and window trim, etc., are desired, they should be included in the proper trade specification according to local jurisdiction.

SECTION 4

PLASTERING MATERIALS—BASE AND FINISH COATS

1. Materials and Mixing

1–1. General—All materials used in plastering shall be stored in a dry place above the ground and shall be handled in such a way as to prevent deterioration or intrusion of foreign matter into the plaster.

1–2. Lime, Gypsum and Cement shall be delivered and stored in original packages of the manufacturer. Any materials in containers showing water marks or which have been damaged or materials that have deteriorated shall be immediately removed from the premises.

1–3. Mixing boxes for base coats shall be clean and tight, approximately 3½ x 7 ft. and 12 in. deep, and 2½ x 4½ x 10 in. deep for finish coats and raised 4 in. at one end. Clean mixing boxes after each gauging.

1–4. Machine mixing shall be permitted in machines made for this purpose if they are cleaned after mixing and kept free of plaster from previous gaugings.

1–5. Tools shall be kept clean and shall not be rinsed in gauging water.

1–6. No more material shall be mixed than can be applied in one (1) hour. Do not mix one gauging with another. Plaster shall not be retempered after it has commenced to set.

Note: Clean water and proper mixing following the direction of the Manufacturer are of extreme importance to good work.

1–7. Plaster shall be kept from freezing for 24 hours after application and no finish coat shall be applied to base which is frozen.

1–8. In hot, dry weather, all openings shall be enclosed with muslin screens or windows kept closed to prevent plaster from drying before it has set; after that, windows shall be opened to permit wall to dry quickly.

1–9. All materials for plastering, except sand, shall be as manufactured by National Gypsum Company, Buffalo, N. Y.

2. Water

Water shall be clean and fit to drink, free from oil, acids, alkali or vegetable matter.

3. Sand

3–1. Sand for base coats shall be sharp, clean and free from saline, alkaline, organic or other impurities. It shall be graded from fine to coarse in conformance with the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Pass through six-mesh screen.

3–2. Sand for finish coats shall all pass a No. 12 screen and shall be white, hard, durable grains free from soluble salts or injurious amounts of organic matter.

4. Plaster

4–1. Base Coat Plaster—Shall be Gold Bond Gypsum Plasters.

4–2. Finish Plaster—Shall be Gold Bond Hydrated Lime Putty with Gold Bond Gauging Plaster or Gold Bond Gypsum Prepared Plaster (specify which).

4–3. Keene's Cement—Shall be Best Bros. Keene's Cement.

SECTION 5

BASE COAT PLASTER—(SCRATCH AND BROWN)

1. Cement Plaster

1–1. On Wood Lath—*Scratch Coat*—Shall consist of one (1) part of fibered plaster to two (2) parts by weight of dry sand.

1–1–1. Soak lath thoroughly 12 to 24 hours before, and again an hour or two before, plastering is started.

1–1–2. Apply in two coats, scratch coat to be applied with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface thoroughly to secure bond for brown coat.

1–1–3. Brown Coat—Shall consist of one (1) part plaster (fibered or unfibered; specify which) to not more than three (3) parts by weight of dry sand. Second coat shall be applied as soon as scratch coat is set hard and at least ¾ dry, to a true and even surface. Surface of the second brown coat shall be darbied and broomed to afford a bond for the finish coat.

1–2. On Gypsum Lath or Insulation Lath—Scratch coat shall consist of one (1) part fibered or unfibered plaster to not more than two (2) parts by weight of dry sand.

1–2–1. The Gypsum lath shall not be wetted before applying plaster.

1–2–2. Scratch Coat—Apply with sufficient pressure to work plaster well into the joints. Scratch surface to provide bond for the brown coat.

1–2–3. Brown Coat—Same as above for wood lath.

1–3. On Wire or Metal Lath—

1–3–1. Scratch Coat—Shall consist of one (1) part of fibered plaster to not more than two (2) parts, by weight, of dry sand.

1–3–2. First coat shall be applied with sufficient pressure to obtain good key, lightly covering lath. Scratch surface to secure bond for brown coat.

1–3–3. Brown Coat—Same as for wood lath.

1–4. On Brick, Clay Tile or Gypsum Tile—

1–4–1. Soak brick and clay tile and sprinkle gypsum tile before commencing plastering to reduce suction.

1–4–2. Scratch Coat—Shall consist of one (1) part of fibered (or unfibered) plaster to not more than three (3) parts, by weight, of dry sand.

1–4–3. Apply plaster to thickness of grounds (⅝ in.) in two (2) coats. Apply first coat in thin layer to obtain bond and double back immediately with second coat, straighten to true surface with darby and broom surface for finish coat.

2. Gypsum Sanded Plaster

2–1. Gypsum Sanded Plaster shall be applied same as above for Cement Plaster without the use of sand but with the addition of water.

2–2. Special Sanded Plaster—Shall be used for clay and gypsum tile and brick.

3. Gypsum Wood Fiber Plaster

Note: Wood Fibered Plaster is used invariably for one (1) and two (2) coat work, never three (3) coat work.

3–1. On Wood Lath—

3–1–1. Soak lath thoroughly 12 to 24 hours before, and again an hour or two before, plastering is started.

3–1–2. Scratch Coat—(Mixed with water.) Apply with sufficient pressure to obtain a good key, filling all spaces between the lath and leaving a light coat over lath. Scratch surface to secure bond for brown coat.

3–1–3. Brown Coat—(Mix equal parts of plaster and sand.) Apply to thickness to fill out to grounds and broom surface.

3–2. Gypsum Lath—

3–2–1. Gypsum Lath shall not be wetted before applying plaster.

3–2–2. Scratch Coat—(Mixed with water, no sand.) Apply with sufficient pressure to work plaster well into joints. Scratch surface to provide bond for brown coat.

3–2–3. Brown Coat—(Same as for Wood Lath above.)

3–3. On Wire or Metal Lath—

3–3–1. Scratch Coat—(Mixed with water.) Apply with sufficient pressure to obtain good key, lightly covering lath; scratch surface to secure bond for brown coat.

3–3–2. Brown Coat—(Mixed with equal parts of plaster and sand.) Apply to thickness to fill out grounds and broom surface.

3–4. On Brick, Clay Tile or Gypsum Tile—

Note: Do not specify wood fibered plaster for these bases.

4. Concrete Bonding Plaster (For Use on Concrete Surface)

(See notes regarding preparation of surfaces.)

4–1. Scratch Coat—(Mixed only with water.) Apply in one (1) or two (2) coats with as great pressure as possible, to thickness of not more than ⅜ in. and score heavily for bond of finish coat which shall be applied as thin as possible.

4–2. Gold Bond Wood Fibered Gypsum Plaster—May also be used (unsanded) for concrete surfaces in place of Concrete Bonding Plaster.

SECTION 6

FINISH COAT PLASTER

1. Smooth White Finish

(Lime Putty and Gauging Plaster.)

1–1. Hydrated Lime—Allow to soak twenty-four (24) hours.

1–2. Finish Coat—Shall consist of three (3) parts of lime putty to one part of dry gauging plaster by volume equivalent to two (2) parts of dry, hydrated lime to one (1) part gauging plaster by weight, and shall be thoroughly and uniformly mixed.

1–3. It shall be applied after the base coat is hard, set and about dry. Sprinkle surface of base coat with water before applying finish coat when necessary to kill suction.

Note: Do not apply finish on a base coat containing frost.

1–4. Apply in two (2) coats, first light scratch coat and the second time filling in all imperfections and straighten by means of straight edges.

1–5. Trowel surface to desired finish, keeping wet with brush. Bring same to complete troweling before plaster has set. Surfaces shall be perfectly true and even without scratches, ridges, waves, chips, voids, cracks, etc. All angles must be true, sharp, straight and clean.

2. Prepared Gypsum Finish (Using Gold Bond Trowel Finish Plaster)

2–1. **Finish Coat**—Plaster is ready after thoroughly mixing with water, allowing to soak for ten (10) minutes without hoeing. Make mix very thin and creamy.

2–2. Base coats must be set and hard and about ¾ dry. If too dry, cut suction by sprinkling with clean water.

2–3. Apply finish in three coats; first coat applied as thin as possible to handle and scratch thoroughly into base coat. Let draw for a few minutes, then apply second coat, leveling up. Apply third coat as thin as can be handled, filling in cat faces and imperfections. Let draw and then trowel to smooth surface, applying water sparingly with brush, but not enough to kill face of plaster. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than ⅛ in. or more than ⅛ in. thick.

3. Sand Float Finish (Using Gold Bond Sand Float Finish)

3–1. Using Prepared Sand Float Finish—add water only.

3–2. Base coats must be set and hard, about ¾ dry, before applying finish coat.

3–3. Finish shall be applied with trowel, scratch in thin coat, then double back with second coat to bring to even, level surface free from surface marks. Use float (carpet) (felt) or (cork) to bring to final, even, granular finish. Apply water sparingly with brush, being sure to complete floating before plaster has set. Avoid joinings by working top and bottom of wall at same time. Finish coat shall not be less than ⅛ or more than ⅛ in. thick.

4. Keene's Cement Lime Trowel Finish

4–1. **Finish Coat**—Shall consist of three (3) parts of Keene's Cement to one (1) part of lime putty by volume (or 100 lbs. dry Keene's Cement to 40 lbs. lime putty).

4–2. Base coats must be set and hard but not thoroughly dry before applying finish coat. If base coat is dry, spray slightly with water but do not soak.

4–3. Apply thin coat well scratched in, then double back and fill out to even surface. Allow to draw for a few minutes, then trowel and brush to a smooth finish, using as little water as possible while troweling. Thickness shall not be less than ⅛ in. or more than ⅛ in.

4–4. **Imitation Tile**—Marked off for imitation tile, the thickness shall depend on depth of scoring but in no case should be less than ⅛ in. at bottom of scoring.

4–5. **Polished Surface**—After cement is dry, polish with a cloth to a high polish.

5. Texture Finish (Gold Bond Color Texture)

Over Gypsum Base Coats—Where used over two-coat gypsum plaster, walls should be floated before application of Color Texture to increase yardage and give more uniform job. Dry walls may be sized or dampened to increase yardage and give longer time for texturing.

Over Lime Finish—It is not good practice to apply Color Texture or any other decorative material over fresh lime putty finish, sooner than four months after application of the lime putty. If, however, it is desirable that the walls be decorated at once, Gold Bond Color Texture can be applied as soon as the lime putty is thoroughly set and dry. **The lime must not be sized.**

Color Texture may be applied over old lime putty walls with or without sizing. Follow detailed instructions packed in every carton.

SECTION 7

ORNAMENTAL PLASTER WORK

1. Cornices and Mouldings

1–1. Cornices and Mouldings of size or girth required should be specified, shown on drawings or noted in schedule of finishes.

2. Ornamental or Enriched Work

2–1. Ornamental or enriched work should also be shown on details, character desired described in specifications and noted on schedule of finishes.

3. Models

3–1. All ornamental work shall be executed from models approved by the Architect.

3–2. Models shall be furnished under a cash allowance of ( ) which shall be included by this Contractor in his contract. Models shall be executed by a modeler (selected by) (satisfactory to) the Architect, and the work shall be executed under the direction of the Architect. Models shall be delivered by the modeler at his studio, ready packed, to this Contractor who shall pay all charges of transportation.

3–3. Models shall be furnished to this Contractor without cost to him by the Owner. Models shall have been prepared under the direction of the Owner.

4. Materials

4–1. Materials shall be Gold Bond Moulding Plaster for run mouldings and ornamental work.

4–1–1. *Mixing*—Add water only to Gold Bond Moulding Plaster.

5. Run Work

5–1. Run Work shall be run full, true and even in accordance with Architect's details. All curved work shall be run true to radius.

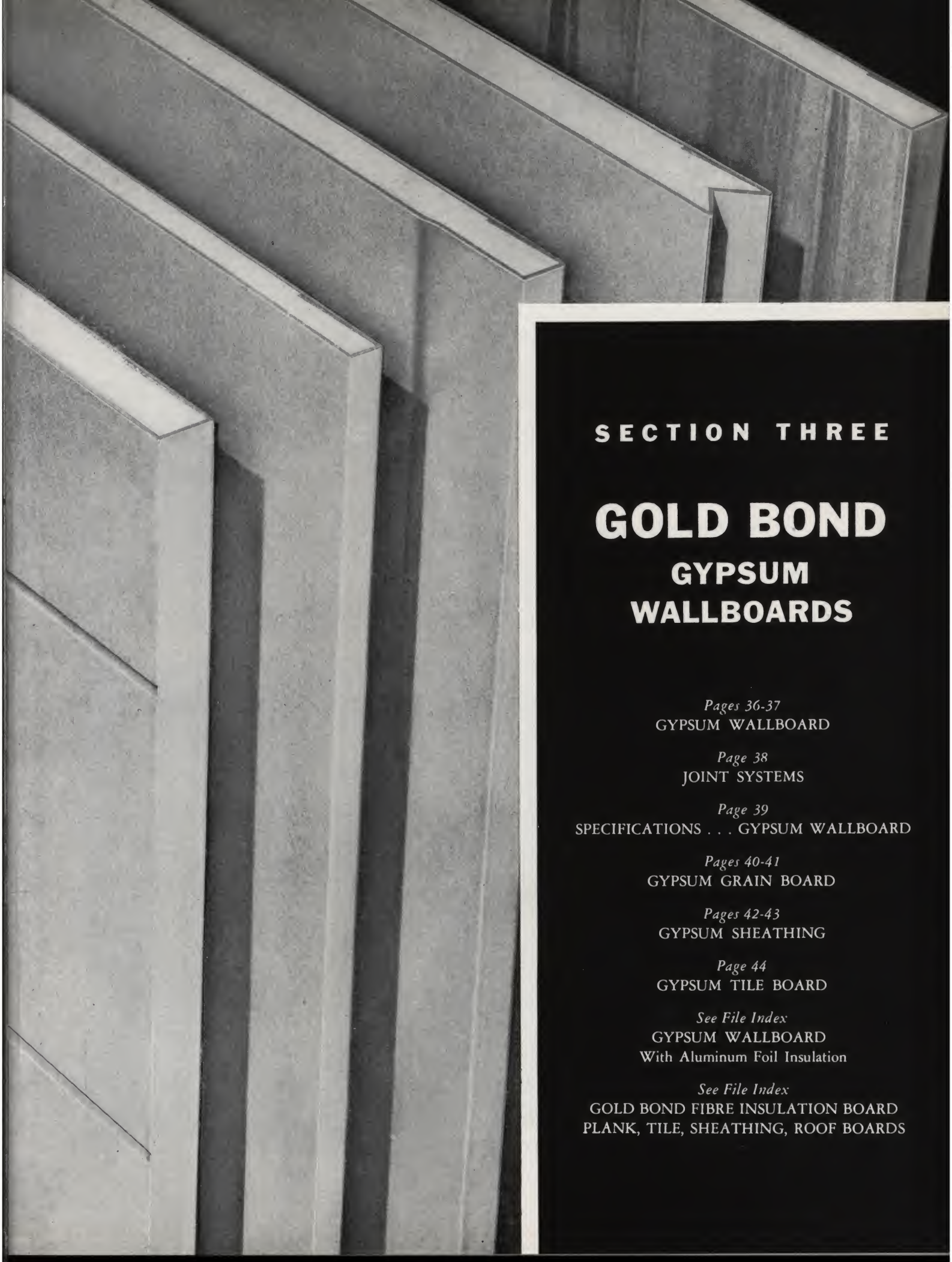
5–1–1. *Templates*—Shall be of metal, clean cut and accurate with the Architect's full-size details.

6. Cast Work

6–1. All enriched work and ornamental work which cannot be run in place on the job, shall be of best quality, cast from gelatine moulds. All work shall be properly backed, cast solid or hollow, and properly reinforced with wood or iron, and shall be securely stuck and held in place with copper wire.

6–1–1. Cast ornamental coffered ceilings shall be cast in sections and reinforced so that sections can be secured to hangers or other support from ceiling slabs, etc.

6–1–2. All cast work shall be set true in surface and alignment and any rough spots shall be finished and sand papered and left perfect, ready for decoration.



SECTION THREE

GOLD BOND
GYPSUM WALLBOARDS

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GYPSUM WALLBOARD
With Aluminum Foil Insulation

See File Index
GOLD BOND FIBRE INSULATION BOARD
PLANK, TILE, SHEATHING, ROOF BOARDS

GOLD BOND GYPSUM WALLBOARD

The Pioneer Lightweight Gypsum Wallboard, Made Under Exclusive Patents . . . Fireproof, Non-Warping Three Finishes: Plain, Tile, Imitation Wood-Grain

GYPSUM wallboard in its present highly efficient form is relatively a new-comer to the building products field. Prior to 1925, when NATIONAL GYPSUM COMPANY was organized, gypsum boards weighed about 2000 pounds per thousand square feet. They were brittle, breaking easily, and chipping along the nailing edge. Because of their excessive weight and fragility, their use was limited.

Gold Bond Changes Industry

Then in 1925, came Gold Bond with patents covering a revolutionary type of gypsum wallboard. The new product weighed 1700 pounds against the old 2000 pound weight . . . it was much stronger . . . its millions of tiny air cells gave insulation never before dreamed of in gypsum wallboard. Overnight gypsum wallboard became a practical building material, with a hundred-and-one uses in remodeling homes, stores, factories, offices, garages, and all types of building.

New Patents for Lighter Board

Years of pioneering followed, during which time Gold Bond continued to improve the quality of its board. Gold Bond engineers were unceasingly at work in an endeavor to further lighten and strengthen gypsum wallboard. They succeeded. And in April, 1934, United States patent numbers 1,932,956 and 1,946,077 were issued covering the manufacture of a gypsum wallboard of extremely light weight plus super-strength.

This important improvement was brought about through a unique method of greatly increasing the number of tiny, dead air cells in the gypsum core. The new board, although lighter in weight, is stronger, more flexible or resilient, higher in insulation value. And it may be nailed close to the edge without splitting.

Exceeds Federal and ASTM Specifications

The National Gypsum Company guarantees its gypsum wall board products to exceed by 100% the strength requirements of Federal Specifications SS-W-51 A and ASTM specifications C-36 for gypsum wallboard, and to meet all other requirements of these specifications.

New Products Introduced

Following the perfection of standard Gold Bond Gypsum Wallboard, Gold Bond Gypsum Tile was announced, followed by Gold Bond Gypsum Wallboard with Aluminum Foil Insulation and Gold Bond Grain Board, which in texture and grain gives the effect of wood paneling at a great saving in cost. The latter product is made in three distinctive finishes—Gumwood, Mahogany and Knotty Pine and comes already lacquered.

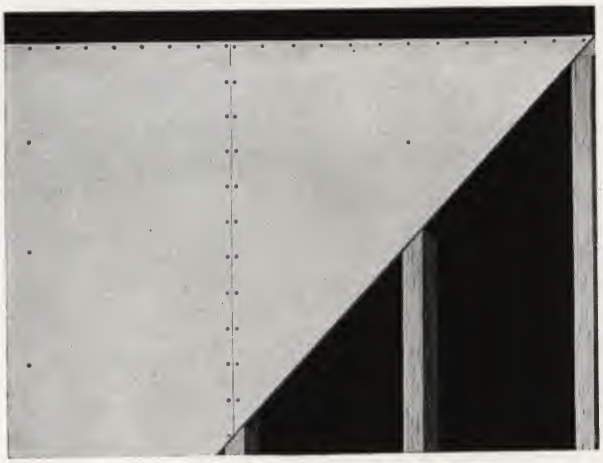
In addition to the standard board with Square Edge as pictured below, Gold Bond Board is also made with Recessed Edge and T. and G. Edge as shown on the preceding page. There are three thicknesses: ¼ inch, ⅜ inch and ½ inch.

For Gold Bond Gypsum Wallboard and Lath with Aluminum Foil Insulation, See File Index.

A panel of ⅜ in. Gold Bond Gypsum Wallboard showing the distinctive edge label

Panels Applied Vertically

¼ or ⅜-in. Gold Bond Gypsum Wallboard, should be applied vertically or parallel with studs. Use headers (extra 2 x 4's) where necessary to provide a solid backing at all edges.



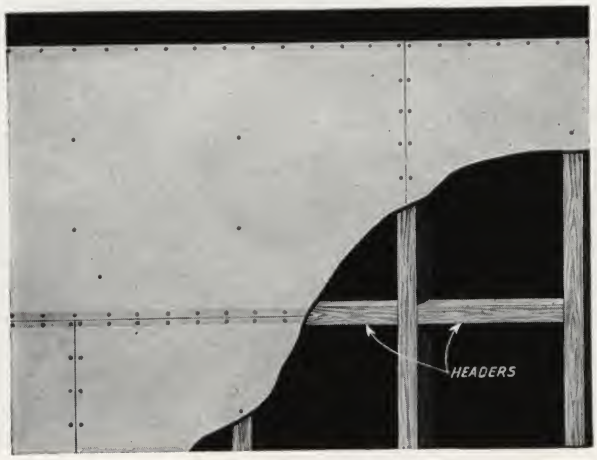
Nails at edges are spaced 3 in. apart and ⅜ in. in from edge of panel. Center nails (to the intermediate studs) are spaced 6 in. apart on walls; 9 in. apart on ceilings.

Fireproof . . . Won't Warp, Expand or Contract

Gold Bond Gypsum Wallboard is fireproof and provides valuable protection for wood framing members. The core is solid gypsum rock. Tests prove the fire resistance of Gold Bond is unexcelled by any other gypsum wallboard. Panels are unaffected by dampness or climatic changes and will not warp or buckle because there is no expansion or contraction.

Panels Applied Horizontally

½-in. Gold Bond Gypsum Wallboard with Recessed Edge or T. & G. Edge should be applied horizontally or crosswise to studs, which provides greater structural strength. With T. & G. Board, the groove edge should be down.



Work from ceiling to floor, applying the top panel first. Use headers (extra 2 x 4's) where necessary to provide a firm backing at all edges. Stagger vertical joints.

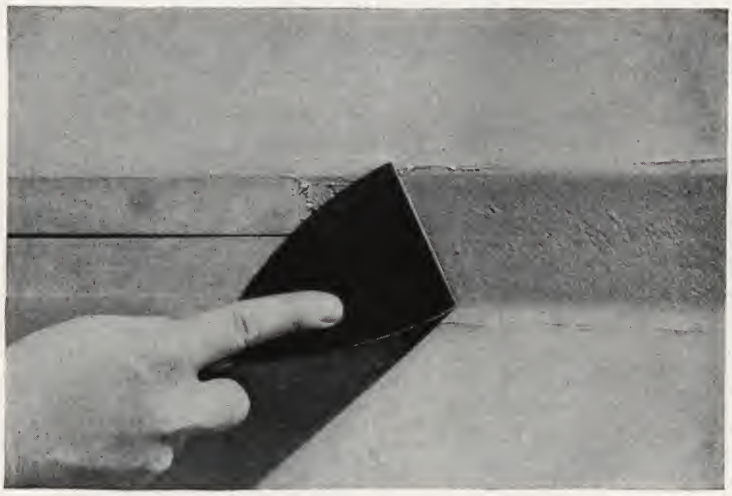
Sizes and Thicknesses

Thickness	Width	Length
¼ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
⅜ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
½ in. Square Edge	48 in.	4, 5, 6, 7, 8, 9, 10, 11, 12 ft.
⅜ in. Recessed Edge	48 in.	8, 9, 10 ft.
½ in. Recessed Edge	36 and 48 in.	8, 9, 10 ft.
½ in. T. & G. Edge	48 in.	8, 9, 10 ft.

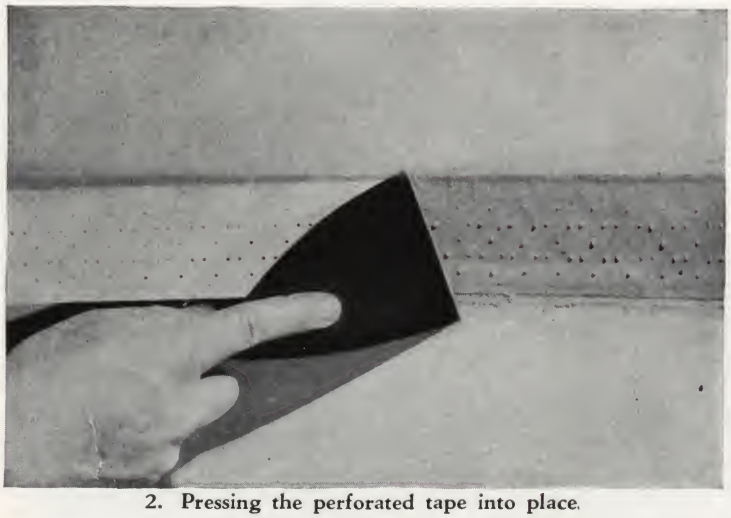
Another charming room . . . Gold Bond Grain Board for the walls, Standard Gold Bond Gypsum Board for the ceiling decorated with Gold Bond Color Texture.

GOLD BOND PERFORATED TAPE JOINT SYSTEM

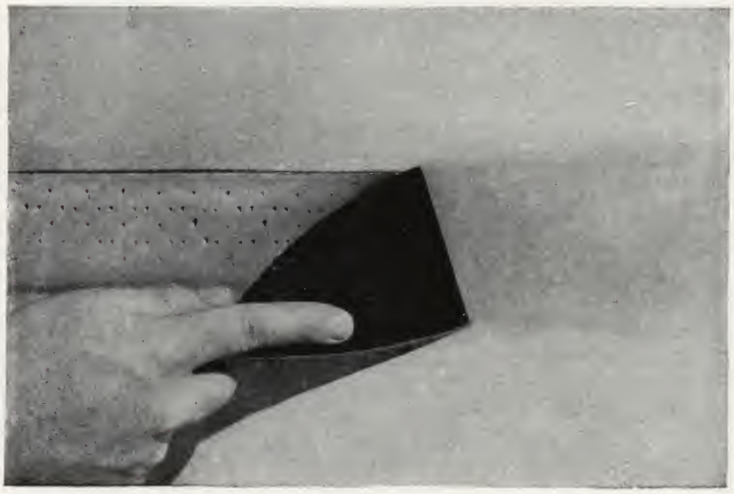
A Simplified Method of Concealing Joints of Gypsum Wallboard for a Smooth, Seamless Wall, Ready for Decoration



1. Filling the channel with cementing plaster



2. Pressing the perforated tape into place.



3. Smoothing surface and feathering out edges

Gold Bond Perforated Tape Joint System is for use with any style of Gold Bond Gypsum Wallboard, square edge, tongue and groove edge or recessed edge. Comprises the use of a fibre perforated tape in conjunction with a smooth-working cementing plaster.

This System works particularly well with recessed edge board because the recess along the edge of the panel forms a perfect channel for the tape and cement. The pictures at the left show the easy steps in applying. If normal care is used, the panel intersections can be completely concealed prior to painting, papering or texturing.

Application

Fill the hollow or channel with the cement as illustrated in Step No. 1, using a 5-in. putty knife. The cement should extend ½ in. beyond the edge of the channel. Apply the perforated tape immediately, directly over the cement and press it into place with the putty knife which automatically forces some of the cement through the perforations, as shown in Step No. 2.

The cement forced through the perforations should be smoothed over with putty knife and allowed to dry. Next, apply another thin coating of cement so that the tape will be completely hidden. Feather out edges as smoothly as possible and let dry thoroughly. Intermediate nail heads should also be carefully filled with cement and brought flush with the surface of the board. The last operation is sanding the treated joints and the filled nail heads with coarse and then fine sandpaper.

Coverage

Standard size carton contains one 250-ft. roll of Perforated Tape and cementing plaster—enough for 550 to 650 sq. ft. of Gypsum Wallboard.

Small size carton contains one 25-ft. roll of Perforated Tape and cementing plaster—enough for 55 to 65 ft. of Gypsum Wallboard.

GOLD BOND FINISHER

For an Inexpensive, Quick Job

Gold Bond Finisher is mixed with water to a putty consistency and applied with putty knife between the panel intersections and over the exposed nailheads. When thoroughly dry, is sandpapered smooth. Supplied in 5 lb. packages. . . . Of course, it isn't possible to do as good a job with Finisher as with Perforated Tape Joint System nor will the joints be as strong as when reinforced with the perforated tape and special cementing plaster.

STANDARD SPECIFICATIONS
FOR APPLICATION OF GOLD BOND GYPSUM WALLBOARD

1. Scope of Work

List all walls, ceilings and other surfaces which are to be covered with Gold Bond Gypsum Wallboard.

2. Framing

2–1. Framing of all studs and joists shall be 16 in. on center, unless for bearing partitions which are 12 in. on center, and shall follow general good practice.

2–2. Headers of 2 x 4 in. shall be provided in ceilings and wherever else required to provide proper nailing for all ends of Gold Bond Wallboard . . . also between studs for baseboards, wainscot, or other finish, and for furring to take wood beams, cornices, etc.

2–3. For old plaster ceilings, nail 1 x 2 in. furring strips over the plaster, to provide proper nailing for ends and intermediate support of boards, using 8d nails.

3. Material

3–1. Wallboard—Where wallboard is referred to hereinafter, it shall mean Gold Bond Gypsum Wallboard as manufactured by National Gypsum Company, Buffalo, N. Y.

3–2. Gold Bond Wallboard shall be (¼ in.) (⅜ in.) thick in lengths to run full height on walls from floor to ceiling and to headers on ceilings.

Note: Where ½-in. Gold Bond Wallboard with T. & G. Edge or Recessed Edge is used, it shall be applied at right angles to studs and joists.

3–3. Nails for ¼ in. and ⅜ in. Gold Bond Wallboard shall be 3d, blued nails 1⅛ in. long for use over studs, joists or beams. For ½-in. board use 4d nails 1⅜ in.

3–4. For directly over old plaster use 6d cement coated common nails 1⅞ in. long.

3–5. Where ceiling has floor above use 4d cement coated nails, 1⅜ in. long for ceiling wallboard.

4. Handling and Preparation

4–1. Receiving Material—Wallboard shall be piled flat on floors with reverse side up except first board which shall be turned down.

Note: (Wallboard shall not be delivered on the job until doors and windows are in place.)

4–2. Handling—Wallboard shall be handled with long edge up.

4–3. Sawing and Cutting—All required cutting of wallboard shall be done with a saw unless joints will be covered by trim. Sawing shall be done with sharp handsaw with back of board placed down and supported close to sawed edge. Other cuts may be made by scoring with sharp edge of hatchet or chisel and breaking over straight edge. Bevel the face side of cut edges and mill cut end with coarse sand paper so that no rough paper edges will remain, unless covered by trim. Recut the ends of all wallboards which have been damaged by handling.

5. Application

5–1. Inspection—Before applying wallboard see that all edges and ends are perfect and all ends and cut edges are face beveled and that faces of boards are undamaged.

5–2. Wallboard, with back toward studs, shall be applied directly to studs, beams, etc. Horizontal joints shall be made only over framed headers.

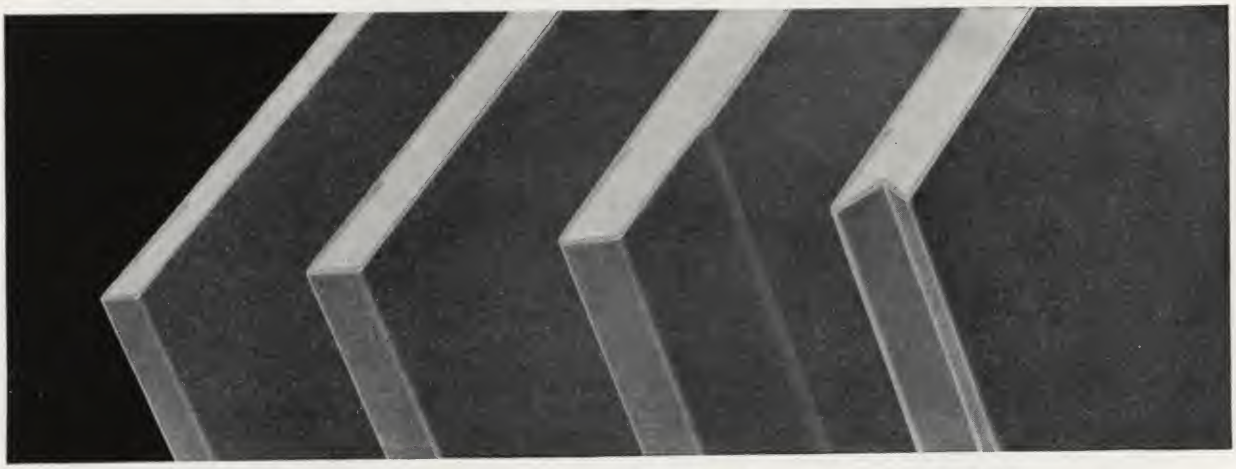
Note: All closed edges of panels shall be butted together. Sawed edges (with gypsum core exposed) or mill-cut ends shall be spaced ⅛ in. apart.

5–3. Nailing—Wallboards shall be nailed first to intermediate studs or beams and nails driven straight in, with heads set slightly below the surface without using nail set. Nails shall be spaced 9 in. apart on intermediate studs of walls and 6 in. apart on ceilings. Nails shall be spaced 3 in. apart and ⅜ in. back from all edges and ends. Boards shall first be tacked on edge to hold to adjoining edge and then shall be nailed first to each intermediate support working from center toward ends and finally sides and ends shall be nailed, with nails opposite each other on edges.

5–4. Ceilings—Ceiling boards shall be erected first and length of board shall be at right angle to ceiling beams. Panels shall be in one piece as far as possible but if joints occur they shall be broken unless covered with strips or wood beams.

5–5. Walls—Wallboard shall be applied in full lengths from floor to ceiling and parallel to framing. (½-in. Wallboard with Recessed Edge or T. & G. Edge shall be applied at right angles to framing with groove edge down and the full length panels shall extend above and below openings instead of "piecing." This adds greater structural strength.) Vertical joints on opposite sides of partitions shall not come opposite each other on the same stud.

Showing the Three Edges in which Gold Bond Gypsum Wallboard is made



Square Edge Square Edge Recessed Edge T. & G. Edge

GOLD BOND GRAIN BOARD

All the Richness of Expensive Wood Paneling at a Fraction of the Cost . . . Three Finishes: Gumwood, Mahogany, Knotty Pine

Gold Bond Grain Board is standard gypsum board with an imitation wood grain surface that defies detection upon casual inspection. Made in three distinctive finishes—Gumwood, Mahogany and Knotty Pine.

In addition to its rich-looking grain surface, Gold Bond offers these important advantages over real wood: the solid gypsum core is fireproof and unaffected by dampness. Won't expand, contract, warp or peel. Saws like lumber and may be nailed without splitting. Installations made years ago, show not the slightest tendency toward fading.

Where Used

Millions of feet of Gold Bond Grain Board have been used in offices, stores, restaurants, taverns, living rooms and dining rooms in private homes, window backgrounds . . . in fact, wherever an impressive wood panel effect is desired.

For Summer Cottages and Recreation Rooms

The low cost of Gold Bond Grain Board—only a fraction as much as real wood—permits its use for even low priced summer cottages and recreation rooms. Besides offering a durable interior finish that is very unusual and beautiful, the cellular gypsum core provides effective insulation so much desired in summer homes. For basement recreation rooms, Gold Bond is strongly recommended . . . it is not affected by cellar dampness and won't warp.

Supplied With Lacquer Finish

Made with a protective lacquer finish which can easily be cleaned with a damp cloth. No further decorative treatment is necessary, but like real wood, additional finishing will bring out its full richness. The simple instructions for further decorative treatment are given on the next page.

Sturdy panels of Gold Bond Grain Board are nailed to the wood framing or, if modernizing, right over the old material. Old fashioned rooms with cracked walls and ceilings can be quickly converted into attractive up-to-the-minute interiors, and at surprisingly low cost.

Thickness and Sizes

Standard thickness, ⅜ in. (Special thickness, ¼ and ½ in.) Gumwood and Mahogany panels are made 32 in. wide and 8, 9, and 10 ft. long. Knotty Pine, 48 in. wide and 8, 9, and 10 ft. long. All panels are carefully wrapped, two to a bundle.

A beautiful room, delightfully different . . . Gold Bond Knotty Pine.

APPLICATION INSTRUCTIONS

Nailing

Gumwood and Mahogany (32 In. Wide)—Space studs 16 in. on centers, using headers (extra 2x4's) where necessary to provide firm nailing surface behind the four edges of each panel. Nails should be spaced 3 in. apart and ⅜ in. in from edge of panel. On sidewalls *only*, it is not necessary to nail the center of the panel to the intermediate stud—this middle stud merely serving as a brace or support behind the center of the panel. Butt the panels together. Nail along the four edges, beginning at the center and working towards the top and bottom.

Knotty Pine (48 In. Wide)—Follow above procedure except the panels must be nailed to the intermediate or middle studs as well as at the four edges. Do the intermediate nailing first beginning at the center of the panel and working towards the top and bottom. Use 4d finishing nails for the intermediate nailing driven at a 45 degree angle. Use care not to mark the board with the hammer. Intermediate nails should be driven just a trifle below the surface so the heads can be concealed with linseed oil putty mixed with stain.

Nails—For new work, use 3d cement coated flat-head nails 1⅛ in. long around the edges. Over old material use 6d cement coated flat-head nails 1⅞ in. long. Drive the nails "home" but do not use a nail set. For intermediate nailing, use 4d finishing nails.

Paneling

Gold Bond Grain Board may be used with or without decorative mouldings over the joints. To obtain a well balanced paneled effect, it is well to prepare a plan in advance for the carpenter to follow.

Or if a paneled effect is not desired, the Grain Board panels can be butted together so that the joints are hardly visible. For the latter treatment, finishing nails should be used around the edges instead of flat-head nails and the nailheads concealed with linseed oil putty mixed with stain.

Decoration

As Gold Bond Grain Board comes already lacquered, no further decoration is needed. May be cleaned by going over it lightly with a damp cloth. Like real wood, additional finishing will, of course, improve the richness. Always apply a priming coat (equal parts of white shellac and alcohol). Follow with a coat of clear (flat or dull) varnish or an emulsified floor wax. The dull varnish finish is particularly recommended. Rub down lightly between coats with steel wool.

A Close-up Showing the Distinctive Wood Graining

Three Home Views Created by Joseph Platt of Delineator Showing Treatments Obtainable with Gold Bond Grain Board

Dining Room

Sun Room

Recreation Room

GOLD BOND GYPSUM SHEATHING

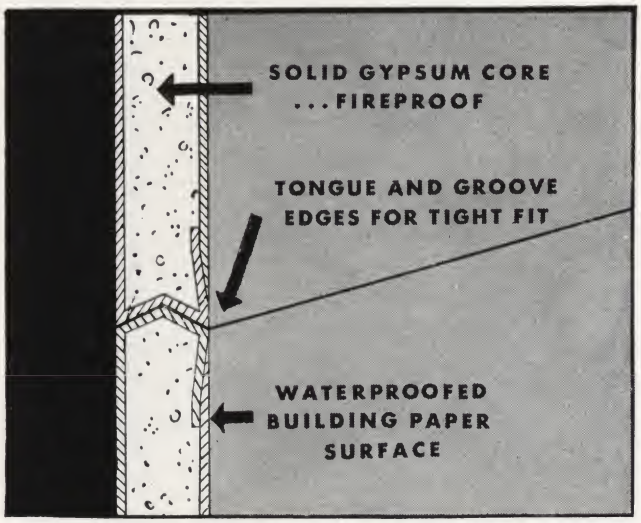
For Use Under Wood Siding, Clapboards, Brick-Veneer, Stone or Stucco . . . Full 1/2-inch Thick . . . Fireproof Solid Gypsum Core Real Fire Protection for the Wood Frame Home

Description

GOLD BOND GYPSUM SHEATHING is a sturdy, knotless sheathing material, full ½ in. thick. The core is solid gypsum rock, encased in heavy, waterproofed building paper with tongue and groove edges. Is rapidly becoming the leading sheathing material because it offers these distinct advantages:

Fireproof	Won't warp, expand or contract
Water-resistant	No building paper required
Windproof	Won't absorb moisture and freeze
Helps insulate	Saws like lumber
Adds structural strength	Costs less . . . Saves labor

Gold Bond Gypsum Sheathing is absolutely non-inflammable and incombustible. It insures permanent fire protection for wood frame houses at no extra cost. Solid gypsum core resists water effectively and additional protection is provided by the heavy, waterproofed paper on both sides.



Gold Bond Sheathing, Full ½-In. Thick, with Core of Solid Gypsum Rock. Long Edges Are Tongue and Groove, Which Make Snug Windproof Joints. Ends Are Perfectly Square.

Easier to Apply

The large sturdy panels go up in no time—an 8-ft. length covering a span of 6 studs spaced 16 in. on centers. Use 10½-gauge flat head roofing nails 1¾ in. long.

Contractors report a further saving can be effected in applying the panels, by working from the inside of the house, thereby eliminating the usual outside scaffolding.

Large, Sturdy Panels of Gold Bond Sheathing Go Up in No Time, an 8-Ft. Length Covering a Span of Six Studs Spaced 16 In. on Centers. No Random Lengths and No Waste. Building Paper Is Not Required.

Won't Warp or Buckle

There is positively no movement in the panels regardless of climatic changes or extreme weather conditions. No possibility of shrinkage, leaving open gaps along the joints.

Windproof . . . Helps Insulate

The infiltration of hot or cold air is effectively stopped by Gold Bond Gypsum Sheathing. This can easily be appreciated when one considers:

First—The wide panels (2 ft.) greatly reduce the number of joints and these are permanently snug because of the tight-fitting tongue and groove edges.

Second—The panels are knotless. No danger of knots falling out after application, leaving holes for wind to enter.

Size, Thickness, Weight

Sizes: 2 ft. x 8 ft., 2 ft. x 6 ft. 8 in.

Thickness: Full ½ inch.

Weight: Approx. 1900 lbs. per M sq. ft.

Edges { Long edges T. and G.
Short edges square

One thousand square feet actually covers one thousand square feet of surface. No random lengths and no waste.

GOLD BOND GYPSUM SHEATHING (Cont'd)

Adds Structural Strength

As indicated by the following chart, ½ inch Gold Bond Sheathing adds greater structural strength to a building than other sheathing materials applied horizontally or diagonally.

Comparative Structural Strength

GYPSUM SHEATHING vs. WOOD SHEATHING
Tests Made at Armour Institute of Technology
(Test Panels 4'x8' . . . made of yellow pine 2x4's spaced 16" on centers)

LOAD IN POUNDS	YELLOW PINE SHEATHING 7/8" x 8"		GYPSUM SHEATHING
	Applied Diagonally	Applied Horizontally	Applied Horizontally
	Deflection in Inches	Deflection in Inches	Deflection in Inches
100	.01	.10	.00
800	.10	2.56	.07
2000	.29	10.94	.20
2800	.54	11.72	.32
3600	1.07		.54
4000			.84
Load at end of test	3925 lbs.	3150 lbs.	4425 lbs.

Builders everywhere are swinging over to this fireproof sheathing. Note the trim piles of Gold Bond in the foreground — absolutely uniform in size and thickness. No danger of "losing" them for kindling wood because they won't burn.

Specifications

(1) Sheathing and Roof Boards—Sheathing and Roof Boards shall be Gold Bond Gypsum Sheathing as manufactured by National Gypsum Company, ½ in. thick, 2 ft. wide, 8 ft. long (or 6 ft. 8 in. long). Nails shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails. Protect panels from the weather until ready for use.

(2) Application—Apply panels of Gold Bond Sheathing directly to supports with lengths at right angles to the studding and rafters with groove edge down and trade-mark in.

Wherever the square ends shall be butted together a support shall be provided and the tongue and groove sides shall be fitted tightly together. Stagger vertical joints.

Panels shall be nailed to each intermediate support and at the ends, the nails to be spaced 4 in. apart and ⅜ in. in from edge at the ends. (49 nails to each 2x8 ft. panel.) Building paper shall not be used over Gold Bond Sheathing.

(3) Siding—Apply siding at right angles to studding, directly over Gold Bond Sheathing. Siding shall be nailed into the wood supports (not to the sheathing) and nails shall be long enough to go through the sheathing and into the studs.

(4) Shingles—Apply 1x2 in. wood furring strips over Gold Bond Sheathing at right angles to studding, to take shingle weathering specified. Furring strips to be nailed securely through the sheathing to the studding.

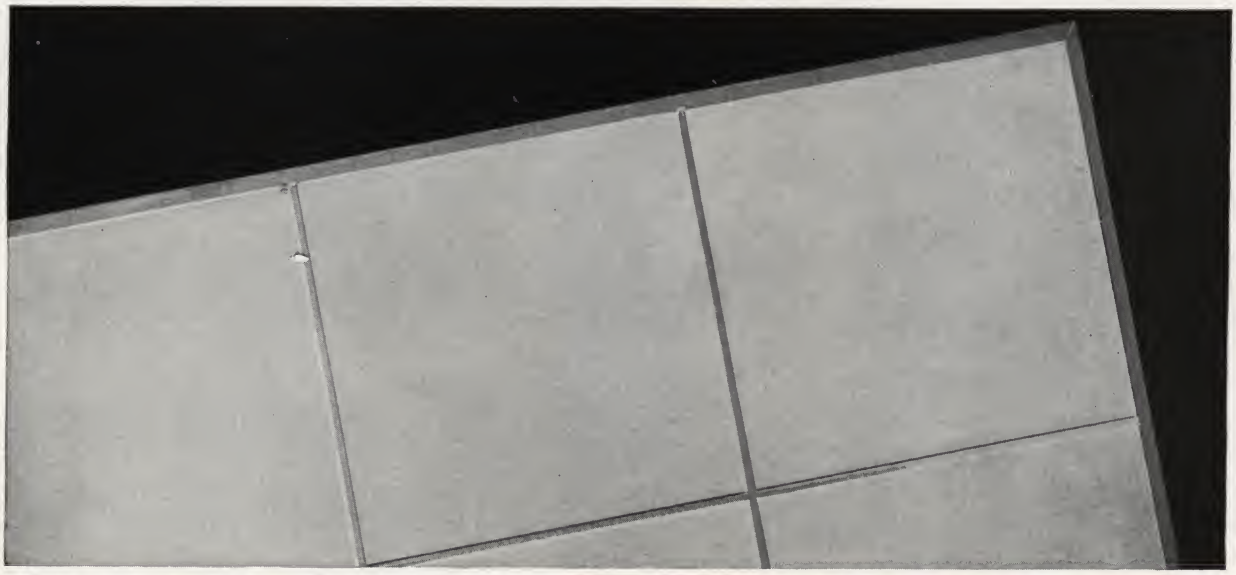
(5) Stucco—Use 2.5 Gold Bond Self-Furring Diamond Mesh Lath Galvanized over the sheathing. Nail securely through sheathing to the wood framing.

(6) Stone or Brick—Wall ties shall be nailed securely through the sheathing to the wood supports.

Showing Gold Bond Gypsum Sheathing, Used with Various Types of Exterior Finish.

GOLD BOND GYPSUM TILE BOARD

For Kitchens, Baths, Restaurants and Stores
Large, Easily Applied Panels with Deep, Clean-cut Tile Indentations
Costs Only a Fraction as Much as Ceramic Tile



Section of Gold Bond Tile Board Showing Embossed Tile Effect. Actual Size of Tile is 4 Inches Square

GOLD BOND TILE BOARD is made under the same processes as Gold Bond Gypsum Wallboard except that the surface is indented to form tile, four inches square. Is fireproof; will not crack, expand or contract and takes a beautiful enameled finish.

Gold Bond Tile Board is ideal for new and modernizing work and costs but a fraction as much as ceramic tile. Saws like lumber and can be applied quickly with little muss or dirt.

An Ideal Combination—Gold Bond Tile Board for the Wainscot and Standard Gold Bond Board decorated with Gold Bond Color Texture or Craftex for the upper walls and ceilings . . . Inexpensive . . . Permanent . . . Washable.

Thickness and Sizes

Panels are ⅜ in. thick and supplied 4 ft. wide and 6, 7, 8, 9 and 10 ft. long. In kitchens and baths of average size, one panel will extend the full length of the wall with no joints except at the corners where a quarter round mould is generally used.

Application and Decoration

Nail panels directly to wall studs or if remodeling, apply over present material. Use flat head nails along the edges, spaced 3 in. apart and ⅜ in. in from edge. Nails should be at least 1⅛ in. long or approximately 2 in. if used over old material. Panels must also be nailed to intermediate studs with finishing nails, these nails to be spaced 8 in. apart (or every two tiles from the top to the bottom of panel). Drive nails "home" but do not use a nail set.

Apply a priming coat of varnish size. Then a coat of paint, followed with a second coat of paint or enamel. Rub down between coats with fine sandpaper or steel wool.

Contrasting Colored Indentations

Give surface a coat of flat paint or enamel undercoating of the finished color desired for the indentations. Then apply a coat of enamel in some contrasting color, brushed on very thin. When enamel has set, wipe out the joints with any narrow tool such as a ruler, match, or ordinary meat skewer. It is advisable to stretch a piece of cloth over the end of the tool to absorb the enamel that is wiped out of the indentations, taking care to keep the cloth clean. This brings out the color of the base coat or undercoating at the indentations and produces an attractive two-color job.

A CHAIN OF 14 MAMMOTH GOLD BOND PLANTS INSURES QUICK SERVICE TO 10,000 DEALERS

Uniform High Quality Is Insured by Constant Supervision from the Time the Raw Materials Are Taken from the Mines Until the Finished Products Are Loaded in the Cars.

Lime Mine at York, Pa. This limestone is exceptionally high in calcium oxide content.

Loading methods approved by the carrier insure contents reaching customers in perfect condition.

Clarence Center Plant Located in the Heart of Western New York's Rich Gypsum Deposit.

NATIONAL GYPSUM COMPANY

THE Gold Bond HANDBOOK

NATIONAL GYPSUM CO., GENERAL OFFICES, BUFFALO, N .Y.

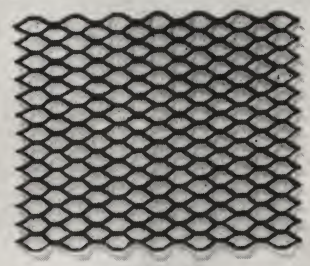
PENN METAL COMPANY, INC.

ESTABLISHED 1869

BOSTON, MASS., 40 Central Street
CHICAGO, ILL., 1500 South Western Avenue
DALLAS, TEX., 1313 Santa Fe Building
DETROIT, MICH., 120 Madison Avenue
LOS ANGELES, CALIF., 647 E. 59th Street
NEW YORK, N. Y., 205 E. 42nd Street
PARKERSBURG, W. VA.
PHILADELPHIA, PA., 1084 No. Delaware Avenue
SAN FRANCISCO, CALIF., 6th and Berry Streets

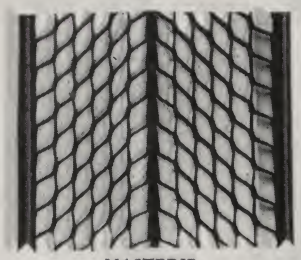
METAL MARK Penmetal 1869 OF QUALITY

70th penmetal year!



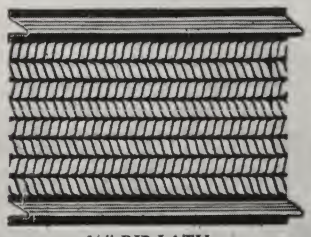
MESHTEX

DURABOND



MASTERIB

LATHTEX



¾" RIB LATH

PRODUCTS

MESHTEX, diamond lath; DURABOND, flat rib lath; MASTERIB, ⅜-in. rib lath; LATHTEX, diamond lath with kraft board backing; ¾-in. Rib Lath; CORNERITE; STRIPITE; WING, WIDE FLANGE and BULLNOSE BEADS; BASE SCREEDS; FURRING CHANNELS.

MESHTEX, SMALL MESH DIAMOND LATH

The product regularly specified for suspended ceilings, solid and hollow partitions, etc. Used in all types of buildings; for all types of plain and ornamental plaster. Its mesh is $\frac{5}{16}$ in. (short way of diamond).

Both painted and galvanized Meshtex can be furnished in either the "Indented" or "Corrugated" type which forms a self-furring base and reinforcement for exterior stucco.

Note table for standard weights and finish.

DURABOND, FLAT RIB LATH

Durabond is a real economy lath and is for use where a wider spacing between studs is necessary than that permitting the use of Meshtex. It has a uniform mesh of more than usual stiffness due to the frequency and unique formation of the ribs and slanting curvature of intervening meshes. Rigid, plaster saving, labor saving.

Note table for standard weights and finish.

MASTERIB, ⅜-IN. RIB LATH

Especially adapted to a large variety of construction (walls, floors, roofs, etc.) where a wide spacing between studs is essential. It combines a channel or U-shaped rib ⅜ in. high and spaced 4½ in. on center with a diamond mesh formation. The ribs are nested in packing to prevent damage in transit and to save warehousing space.

Note table for standard weights and finish.

PENMETAL LATH IS FURNISHED IN THE FOLLOWING STANDARD WEIGHTS AND FINISH

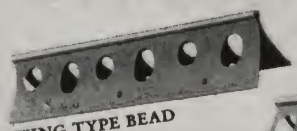
Meshtex Weights per sq. yd.				Durabond Weights per sq. yd.			Masterib Weights per sq. yd.			
Painted steel	Galvanized steel	Copper-bearing steel	Armco or Toncan	Painted steel	Galvanized steel	Copper-bearing steel	Painted steel	Galvanized steel	Copper-bearing steel	Armco or Toncan
2.2 lbs.	.....	.....	.....	2.75 lbs.	.....	.....	3.0 lbs.	.....	.....	.....
2.5 lbs.	2.5 lbs.	.....	.....	3.0 lbs.	.....	.....	3.4 lbs.	3.6 lbs.	3.4 lbs.	3.4 lbs.
3.0 lbs.	.....	3.0 lbs.	.....	3.4 lbs.	3.6 lbs.	3.4 lbs.	4.0 lbs.	.....	.....	.....
3.4 lbs.	3.4 lbs.	3.4 lbs.	3.4 lbs.							

Size of sheet, 27x96 in.; area of sheet, 2 sq. yds.
Packed 10 sheets, 20 sq. yds. per bundle.
All Penmetal Lath is squared on the ends, painted, and oven baked dry in individual sheets before bundling. No other lath possesses all of these features.

ACCESSORIES

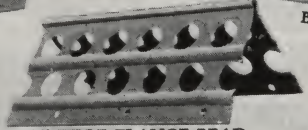
In addition to products above the Penmetal Line includes Sheet Lath, Stucco Mesh, Burial Vault Mesh, Tie Wire, Steel Studs for hollow partitions, Wall Ties, Clips for attachments, Corner Bead Clips, Special Beads and Screeds, Metal Arches, etc.—a complete line of Metal Lath Products.

Send for our General Line Catalog.

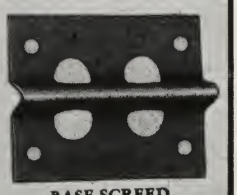


WING TYPE BEAD

BULL NOSE BEAD



2½" WIDE FLANGE BEAD



BASE SCREED

PETERSON AND NEVILLE, INC.

Manufacturers of Hollow Metal Door Frames and Sanitary Metal Trim

365 Dorchester Avenue, BOSTON, MASS.

AGENTS IN PRINCIPAL CITIES

For Our Page on Hollow Metal Door Frames, see File Index

Products

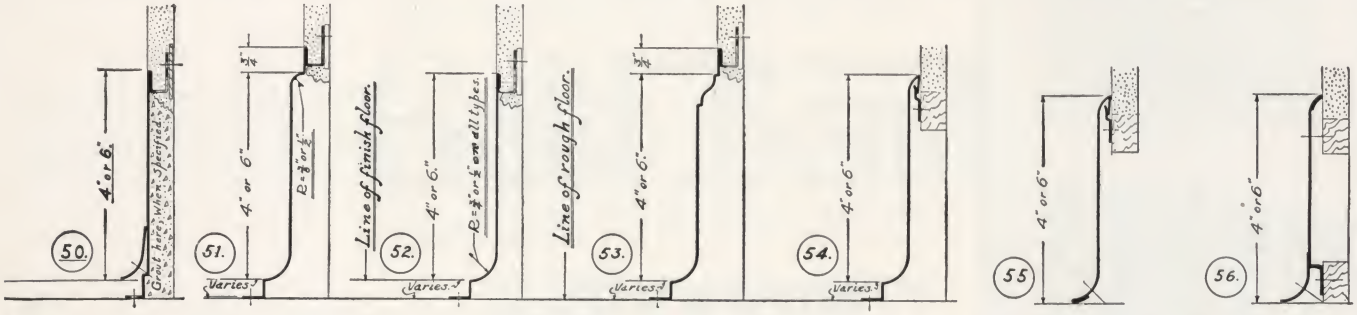
SANITARY COVE BASE; CHAIR RAIL; DOOR CASINGS; WINDOW TRIM; SPECIAL MOULDINGS; STOP BEAD; CORNER GUARDS; PICTURE MOULDING; WINDOW STOOLS; MAP RAIL; CHALK TROUGH; BLACKBOARD TRIM.

Two Types of Trim

The majority of this trim is made in two types, the self-grounding or plastered-in type, which is applied before plastering, making wood grounds unnecessary, and the applied type which is set in place after plastering. We strongly recommend the former type as being neater, stronger and also much more sanitary as it leaves no lodging place for dust or vermin. The extra cost is small, when the saving due to omission of wood grounds is considered.

Flexibility of Design Possible

The construction of our dies permits a flexibility of design which is not possible with ordinary standard equipment, and in many cases we can furnish at no additional cost what is practically a custom-built job, permitting the architect to satisfy his individual desires, and to keep the metal trim in harmony with other material in the buildings. Our Engineerings staff will cooperate in working out special mouldings and will be pleased to submit a layout of metal trim for each individual job.



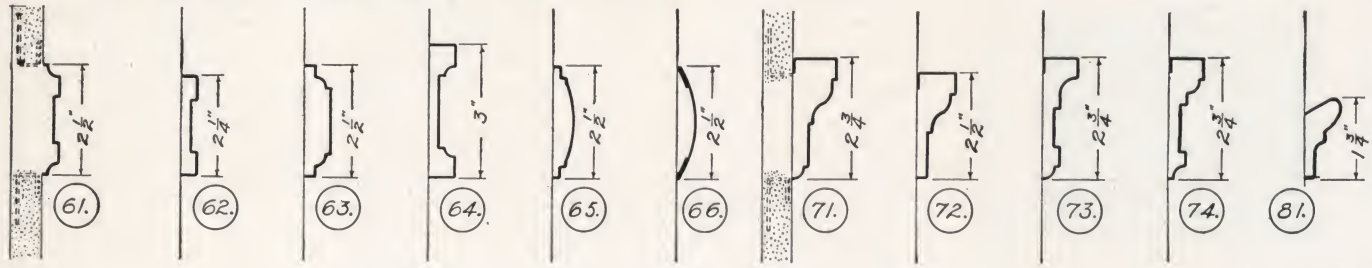
Base

Nos. 50, 51, 52 and 53 are plastered-in types, applied before plaster and finish floor. No. 50 has separate cove, applied after finish floor. No wood grounds required. No. 54 is applied after plaster and before finish floor, the others after plaster and finish floor.

Made from 16, 18, or 20-gauge tight-coat galvanized steel. Space in back filled with grout where specified. We do not recommend using lighter than 18-gauge without grouting.

Heights shown are standard, but may be varied at slight additional cost. Necessary cast corner fittings and plinths are available.

Our catalog shows full size details of trim and fittings. Available to architects on request.



Trim

These sections, as shown in solid lines, are all suitable for use as applied metal door trim or chair rails. Nos. 61 and 71 show how flanges may be furnished on all sections for use as plastered-in trim. The first six sections may be adapted for use as blackboard trim and the remainder are suitable for window apron as well as door trim, except No. 81 which is a picture moulding. We also furnish standard, concealed picture moulding. All this trim made in 16, 18, and 20-gauge with miters welded at factory. Fittings furnished with chair rail.

Trim is held firmly in place with flat head screws, countersunk below the surface. Holes are filled flush with metal filler, sanded smooth, thus concealing all fastenings. Where it is desirable to remove trim for any purpose, exposed countersunk oval head screws may be used. Sizes may be varied to suit special conditions.

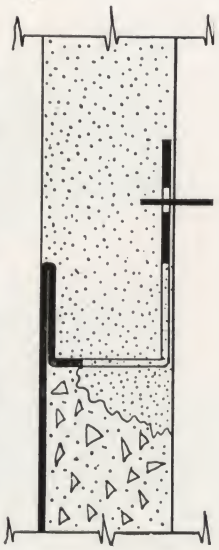
We also furnish a complete line of mouldings designed to snap on over concealed clips, which make a very neat appearance at slight additional cost. These mouldings, as well as those illustrated, may be used as casings on wood door frames or on any of our plain trim metal door frames (see File Index). Made of lighter stock, they have a more clean cut and sharper appearance than integral trim on metal frames.

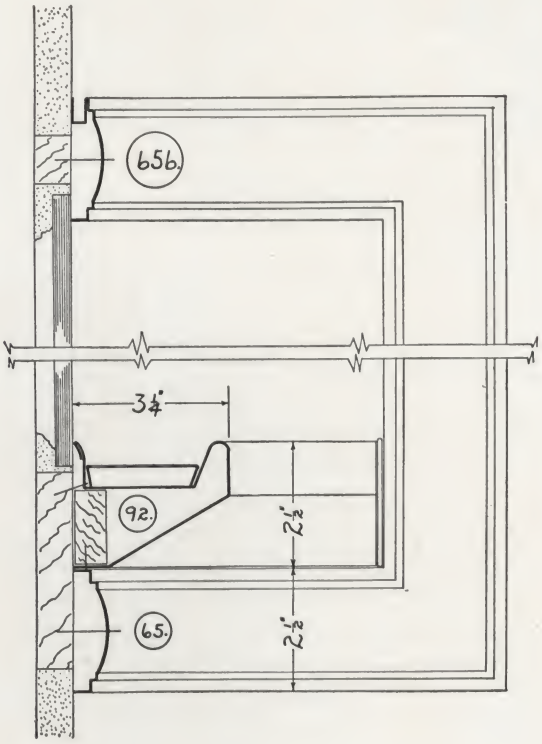
Plaster Flange

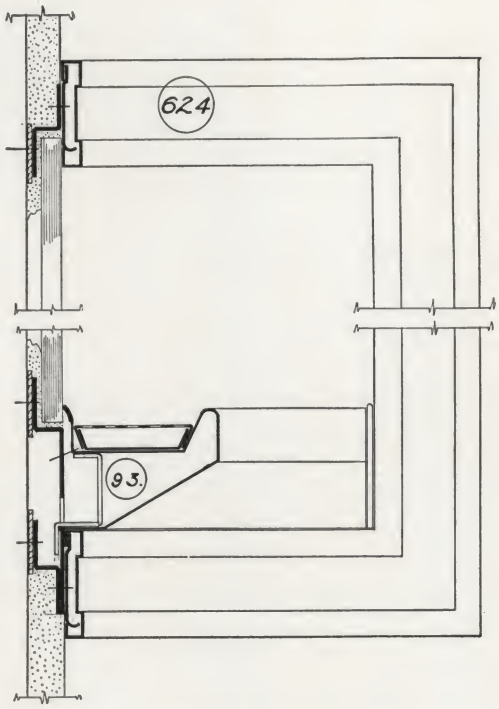
The point of contact between plaster and metal trim of the plastered-in type is one that should receive careful consideration. We show herewith our improved plaster flange, which we use on all trim of this type, and which we have found most satisfactory for this work.

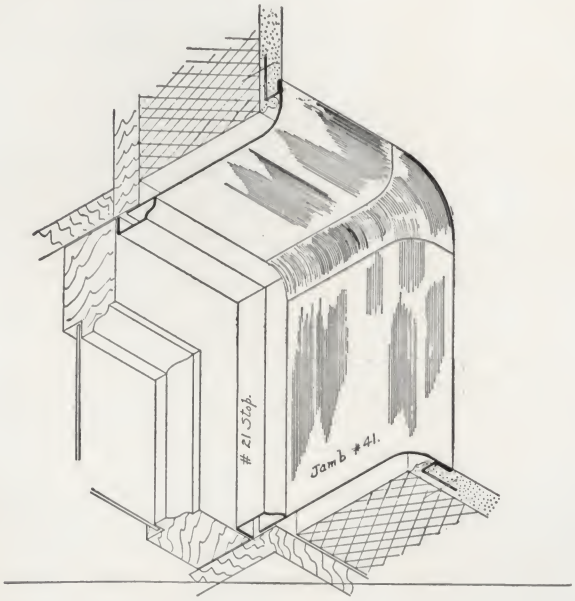
Note that trim and nailing flange are formed from one piece of metal, with no separate clips to loosen or get out of line.

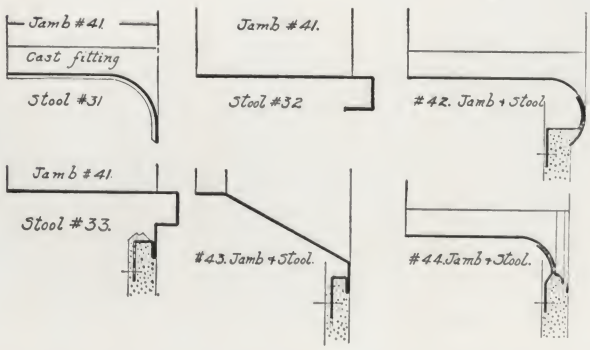
Note also the thin edge where trim meets plaster and the deep recess and perforations which allow plaster to lock firmly behind edge of trim, thus making a solid bond between these two materials. Where specified, we furnish a strip of expanded metal welded to the nailing flange, which still further improves bond between plaster and metal, or we can furnish standard flange at a slightly lower cost.











Blackboard Trim

Directly above we have illustrated our type No. 624 trim with metal grounds and snap-on moulding.

Concealed clips are attached to metal grounds, holding trim firmly in place, without visible screws or other projections. Clips also hold the blackboard, and are stiff enough to pull the slate into line when sprung or warped.

On left above is No. 65 trim, with No. 656 map rail, made for attaching to wood or metal grounds after plastering. Oval head screws may be used or countersunk flat head screws, covered with metal filler and sanded smooth.

Same type of chalk trough is used with either type of installation. We show a one piece and a somewhat stiffer two piece dust tray. Map hooks furnished with either type.

Any of our trim mouldings, Nos. 61 to 66, inclusive, may be used with either type of blackboard trim installation. Also where suitable, a cap moulding may be added. Corners welded and mitered at factory where specified, or cast corner fittings may be used.

Window Trim

The illustration at left shows upper right-hand corner of our No. 41 flush window trim with cove corner fittings, designed for erection after rough wall is built and before plastering. Where lining tile is used, we recommend erection of trim before this tile is placed, and furnish special anchors, which are built into joints of tile, tying trim to wall.

With this construction, space in back of trim is filled with mortar, not only at stools, but at heads and jambs as well, making a more solid, airtight and sanitary construction as well as saving cost of wood furring, which is used in many cases.

Jamb sections Nos. 42, 43, and 44 may be used with welded mitered corners, or with cove fittings, using same section for stools, or stools Nos. 32 and 33 may be used. These mouldings give a definite stopping point when different colors are used for painting window reveal and plaster wall.

Stool No. 33 is made 16-gauge or lighter as required. Other stools shown can be furnished in any gauge, size or shape desired. We recommend not lighter than 16-gauge for any stools, and find that 11-gauge is desirable where exposed to rough usage. Stools should be set in soft grout where possible.

SIMPLON PRODUCTS CORPORATION

551 Fifth Avenue, NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

THE SIMP-L-ON FURRING SYSTEM

U. S. Patents 2,064,984; 2,101,551; 2,101,552. Canadian Patent 356,172

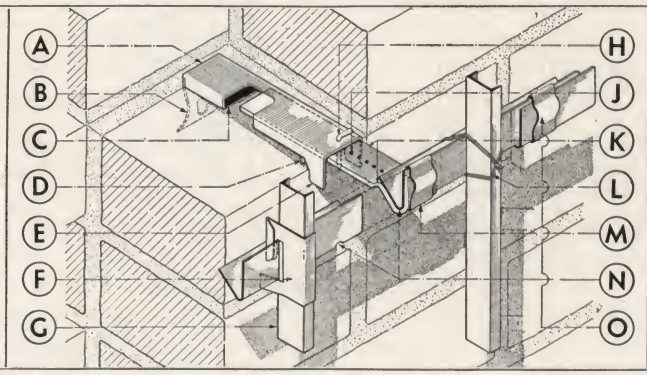
Simp-L-On is a system of steel wall furring for any type of new masonry wall construction—brick, block, rubble stone or reinforced concrete. Simp-L-On is a quality product made of galvanized copper-bearing steel. It is competitive, because Simp-L-On materials form only a small but basic part of the complete furring and lathing. Architects can merely specify Simp-L-On by name with positive assurance of satisfactory results.

The object of furring is to provide an air space and thereby it eliminates direct contact between finished wall materials and the masonry wall. The use of Simp-L-On guarantees this result and assures the economical use of better materials, as well as an absolutely true and plumb finished wall surface. The adjustable bracket permits adjustment to within ⅛ in. Heavier brackets in any length fit the same shield for any depth of furring.

Tested and used by leading architects throughout the United States, including the U. S. Treasury Department, Simp-L-On has solved one of the most important and difficult problems in building construction.

The isometric drawing illustrated shows in detail the various parts of the system and reasons therefor.

A—22-gauge galvanized metal shield built into brickwork
B—Spring flange, clamping shield to brick
C—Shield entirely enclosed to prevent clogging by mortar
D—Lug under front of shield provides pitch and prevents water flowing toward plaster
E—Projecting hood—provides alignment of shields in relation to face of masonry, prevents moisture on face of wall reaching Bracket "K" and prevents mortar droppings clogging opening
F—Simp-L-On channel clip for securing channels to horizontal member



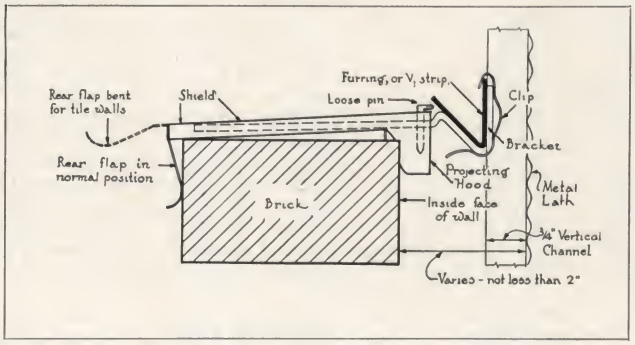
G—Vertical channels (spaced as desired) to receive metal lath
H—Removable pin for bracket adjustment
J—Holes for adjustment—¼ in. on centers
K—Adjustable Bracket made in any length desired
L—Ordinary method (wiring) of securing vertical channels
M—Clip securing horizontal member to brackets
N—Horizontal furring member with weep holes
O—Method of overlapping strips and clipping together to form continuous horizontal member

Above Shows Installation of Simp-L-On in Brick Wall Ready to Receive Lath

Detailed Specifications

A detailed specification of installation of Simp-L-On Furring will be sent on request either for general use or for Governmental agencies and PWA projects.

Detailed specifications to cover the use of the Simp-L-On Type "B" shield for reinforced construction will also be sent on request.



Cross Section Through a Brick Showing Proper Installation of Type "A" Shield

For All Types of Masonry

Type "A" shield is designed for brick, tile, rubble stone, and concrete block construction. Type "B" shield should be used for reinforced concrete.

Modified Simp-L-On

A modification of the Simp-L-On System, retaining the adjustable and labor saving features, has been designed for use in place of wood furring where *low-cost* of construction is important. Complete literature, specification and samples of Modified Simp-L-On will be gladly furnished.

Short Specification

Under Heading of Mason Work—This contractor shall furnish and install in strict accordance with directions of manfacturer, 22-gauge galvanized metal shields Type ("A" for brick, tile or stone masonry, "B" for concrete) as manufactured by the SIMPLON PRODUCTS CORPORATION, 551 Fifth Avenue, New York, N. Y. The Mason Contractor shall use care in locating the shields accurately and, should any shields be improperly located or installed, he shall reimburse the Furring Contractor for any additional work required to provide the necessary fixed support for the furring.

Under Heading of Furring—The Furring Contractor shall furnish and erect a complete system of furring equal to the Simp-L-On System as manufactured by the SIMPLON PRODUCTS CORPORATION, 551 Fifth Avenue, New York, N. Y. This will consist of 12-gauge galvanized brackets inserted in the shields and secured to the shields with cadmium plated pins, galvanized V-strip with 1-in. legs clipped to brackets with cadmium plated spring clips and ¾-in. (or 1-in.) vertical channels spaced 16 in. (or 12 in.) fastened to V-strip by means of 22-gauge galvanized channel clips. Brackets, V-strip and channel clips to be copper-bearing steel. All to be erected in strict accordance with manufacturer's directions.

Demonstration Set

A demonstration in your office of the operation of this simple method is possible with Simp-L-On Demonstration Set which will be sent free on request.

A Few Representative Installations

Rockefeller Center, New York, N. Y.—International, Time-Life and Associated Press Buildings.
Schools—Wilmington, Del.; Montclair and Westfield, N. J.; Dobbs Ferry, Yonkers and Hunter, N. Y.; Norwalk, Greenwich and Danbury, Conn.; Paris, Ky.; Reading and Pottstown, Pa.
Colleges—Brooklyn College (entire group); Wooster College; Denison University; Stevens Institute of Technology; Medical College of Virginia.
Federal Buildings—San Francisco; New York, N. Y.; Ketchikan, Alaska.
Post Offices—Sitka, Alaska; Lebanon, N. H.; Lodi, Calif.; Seattle, Wash.; Forest Hills and Poughkeepsie, N. Y.; Vicksburg, Miss.
Churches—St. Luke's, Schenectady, N. Y.; St. Theresa, Richmond Hill, N. Y.; St. Agnes, Rockville Centre, N. Y.; St. Andrew's, Astoria, L. I., N. Y.; St. Paul's, Clifton, N. J.; St. Agatha's, Brooklyn, N. Y.
Hospitals—New York, N. Y.; Kingsport, Tenn.; Jersey City, N. J.; Tupelo, Miss.; Provo, Utah; Richmond, Va.; Ada, Okla.

Erected Fast—Built to Last

THE RED BOOK

1939 EDITION

UNITED STATES GYPSUM COMPANY

UNITED STATES GYPSUM COMPANY

GENERAL COMMODITIES

Plasters • Plastering Bases • Plastering Systems Wallboards

• • •

EXPERIENCE—The United States Gypsum Company is a pioneer in the gypsum industry in America. For more than thirty-five (35) years, the company—through its laboratories, experimental departments and field investigations—has closely studied the requirements of the building industry. Its formulae and mechanical equipment have been painstakingly designed to adapt each of its gypsum and other products to meet comprehensively these requirements.

COMPLETE DIVERSIFIED LINE OF PRODUCTS—Wherever gypsum is adapted to building uses there is a USG* product specially designed to fulfill the particular requirement.

The broad scope of the company's gypsum and other products is indicated by the Products Index.

MANUFACTURING AND DISTRIBUTING FACILITIES—The superiority of USG products is based upon high grade raw material, perfected processes of manufacture and one control of the gypsum products from mining to shipping.

The fifty mines, mills, and warehouses, strategically located throughout the United States, assure exceptional national distribution facilities and a product specially manufactured to fulfill variable local climatic conditions.

SALES AND SERVICE FACILITIES—The twenty-five sales offices in the important building centers guarantee adequate service to architects. The list on the back cover shows the location of the USG sales offices.

THE TRADE-MARK—Products bearing the trade-mark of the United States Gypsum Company are safeguarded against imperfections. They are rigidly inspected by experts at every stage of production, from the selection of the raw materials to the shipment of the finished products.

Any variation from the highest USG Standard means rejection.

This rigid maintenance of quality over a long period of years has established the name and trademark of the United States Gypsum Company as synonymous with the highest standard of excellence in building materials.

GYPSUM • TECHNICAL DATA

GYPSUM—Chemically, Gypsum is hydrous calcium sulphate $CaSO_4.2H_2O$. It is a widely distributed mineral found in rock formation. The rock gypsum is crushed, ground and then calcined, which drives off a part of the molecular water, forming the hemi-hydrate or plaster of paris. This product, when mixed with water, recrystallizes or sets.

FIREPROOF—The superior qualities of gypsum as a fireproof building material have been definitely established by numerous tests made by the Underwriters' Laboratories, Inc., The Bureau of Standards, Columbia University, and by the bureau of buildings in many of the larger cities. (Authentic test data if desired will be furnished on request.)

The temperature of the unexposed side of the gypsum slab cannot exceed 212° F. while there is any water of crystallization in the gypsum. This is due to the fact that the water of crystallization in the gypsum must be vaporized during the application of fire to it, and as the gypsum slowly calcines, the cellular structure fills with steam. It is this barrier of calcined material which stubbornly resists the progress of the fire.

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Plastering Systems	14, 15, 16, 17, 18, 19	Wallboards	29, 30, 31, 32

FOR PRODUCTS DESCRIBED IN OTHER SECTIONS, SEE MANUFACTURERS' INDEX

*Registered Trade-Mark

PLASTERS

• • •

GYPSUM PLASTERS • GENERAL DATA

GENERAL FEATURES

DESCRIPTION—Gypsum Plasters are made by driving off water of crystallization from gypsum rock through calcination, or heat treatment. The addition of water to this basic material (calcined gypsum rock) forms a plastic mass which unites with the same amount of water as was driven off during calcination. When this plaster is mixed with water it re-crystallizes.

QUICK-SET—FAST DRYING—Gypsum Plaster sets up uniformly hard and homogeneous within two to six hours after application. Inside of thirty-six hours, under proper drying conditions, the plaster dries and there is no further dampness or sweating.

ADVANTAGES

ADAPTABILITY—Gypsum Plaster adheres satisfactorily to gypsum, wood or metal lath; gypsum or clay tile; brick or other approved plastering surface.

FIRE RETARDING—Made of gypsum, it is fireproof.

EXCEPTIONAL ADHESIVENESS—Its exceptional adhesiveness greatly increases structural durability.

DOES NOT EXPAND OR CONTRACT—It does not expand and tear itself loose from the surface to which it is applied, even when subjected to fire. It will not crack of itself, shrink or stain.

DURABLE—Gypsum Plaster will withstand the wear and tear of occupancy during the life of the building. It affords a substantial foundation for the finish coat and applied decoration.

SAVES TIME—It sets in two to six hours and dries within 36 hours—interior trim and finish may thus, reasonably soon, follow the plastering without danger from moisture.

PLASTICITY, RICHNESS and "SLIP"—USG Plasters have been developed as much for the convenience of the plasterer as for the above qualities. The result is an unusual richness and "slip" which is appreciated by the competent mechanic. They mix easily at the mortar box; they go on quickly and spread far, resulting in maximum coverage with minimum labor.

UNIFORMITY

The quality of USG Plasters is rigidly controlled by repeated chemical tests, physical tests, and by effective inspection in every stage of manufacture, from the crude gypsum rock to the finished product. Samples from every shipment are retained for future reference.

All USG Plaster meets the standard specification for Gypsum Plaster of the American Society for Testing Materials.

IDENTIFICATION • RED TOP* BAG

In addition to the USG trademark on each bag of plaster, the United States Gypsum Company's Plasters are contained in the standard Red Top bag, which provides a positive means of identification that discourages substitution.

PLASTER PACKAGE

GENERAL—Every package of USG Gypsum Plaster bears the familiar trade-mark (see front cover), and bags have the Red Top. Each bag bears the brand and the mixing directions.

REINFORCED PAPER BAG—The paper bag, made of layers of strong kraft paper, is the standard bag of the United States Gypsum Company.

COVERING CAPACITY

The covering capacity of USG Plasters is as great for each type of material as it is possible to obtain.

Covering capacity necessarily depends upon conditions under which the plaster is applied—upon the mechanic, thickness of grounds, kind and trueness of the surface to be plastered, spacing or voids of lath, quality of sand, etc.

The covering capacity given hereinafter with each type of material and for the various surfaces to receive the plaster is based on average conditions.

BRANDS

The standardization nationally of USG plasters under the "Red Top" brand is a protection to the architect and a convenience to the trade. The architect is assured that the quality of the plaster, from whatever mill shipped, will be identical.

When specifying "Red Top" for use in a distant city, the architect is assured (1) that the plaster will be the same as that with which he is familiar; (2) that a shipping mill is in close proximity; (3) that the plaster will be recognized as standard by the local mechanics.

*Registered Trade-Mark

CEMENT PLASTERS
(Fibered and Unfibered)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top*	Niagara	King's Windsor*
Granite	Peerless	Red Top Eldorado*
Big-4*	Hardwall	(Gypsite)

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Red Top Cement Plasters are "neat" materials—sand to be added at the job. They are unusually rich, spread well, and, when mixed properly with a good grade of sand, are uniformly satisfactory in ultimate results in the finished wall.

Manufacture under the "Red Top Process" assures the maximum in sand carrying capacity, easy workability, and bulk. They set in a uniform time over any base unaffected by ordinary job conditions.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions Gypsum Cement Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	180–210 (Sanded 2 to 1)	105–135 (Sanded 2 to 1)	225–240 (Sanded 2 to 1)	165–200 (Sanded 3 to 1)	235–255 (Sanded 3 to 1)

WOOD FIBER PLASTERS

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top.
Red Top Eldorado (Gypsite).

Note—*Gypsite plasters, popularly known as "dark plasters," are well adapted to the climatic and building conditions of the Southwest.*

DESCRIPTION—Wood Fiber Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster, to which is added finely shredded wood fiber, uniformly distributed. Made of pure gypsum reinforced with wood fiber, it is extremely tough, strong, dense, and durable. It is superior to sanded plaster in fire-resistance, insulation, and sound-deadening. Its great flexibility adapts it to withstand vibrations and strains.

Wood fiber plaster avoids the handling of sand, dangers of poor sand, and oversanding. It is smooth, fatty, and spreads easily. When applied, it weighs about two-thirds as much as sanded cement plaster.

It is especially adaptable to alterations and is desirable for winter use. It may be sawed like wood.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions this plaster mixed and applied as specified will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath
Sq. yds. per ton	90–100 (Unsanded —water only added)	55–65 (Unsanded —water only added)	115–120 (Unsanded —water only added)

PREPARED PLASTERS
(SANDED)

USE—Use for scratch and brown coats.

BRANDS—Note—*See "Brands," page 2.*

Red Top* Sanded Plaster.
Red Top Sanded Plaster for Brick or Tile.
Red Top Sanded Wood Fiber Plaster.

DESCRIPTION—Prepared Plasters are shipped ready to use, requiring only the addition of water. The base is Gypsum Plaster to which is added nothing but sharp, clean plastering sand, thoroughly graded and screened.

Correct proportions and mixing are accomplished by automatic machines at the factory.

Prepared plasters are desirable in localities where good sand is difficult to obtain.

Since they are ready to apply with the addition of water only, they are particularly well adapted for use in winter when unfrozen sand of good quality is difficult or expensive to obtain.

Since these plasters may be readily mixed inside the building, they are useful for repair and remodeling work in all seasons.

DIRECTIONS—*(See Master Specifications, pp. 25, 26).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Note—*See "Covering Capacity," page 2.*

Basis—Under average conditions Gypsum Prepared Plaster mixed and applied in accordance with standard specifications will cover about as follows:

Plastering surface	Wood lath	Metal lath	Gypsum lath	Brick and clay tile	Gypsum tile
Sq. yds. per ton	60 to 70	35 to 45	75 to 80	45 to 55	65 to 70
	(Plaster mixed with water only—no sand added)				

*Registered Trade-Mark

BONDCRETE* • For Interior Concrete Surfaces

USE—Use for scratch and brown coats over concrete.

DESCRIPTION—Ordinary gypsum or lime plaster does not adhere properly to concrete—consequently Bondcrete, a specially made plaster for concrete surfaces, is recommended. Water only added on job.

Bondcrete permits moisture, expelled from concrete for approximately a year, to be carried through and evaporated on the surface, thus avoiding a condition approaching a sweat-out. Any plaster finish can be used over Bondcrete. Oil paint decoration should be deferred for a year.

Bondcrete adheres strongly to dry concrete due to its cementatious qualities and its practically unchanging volume during setting and hardening. It needs only water to make it ready for use.

Do not apply Bondcrete over a smooth, oily or efflorescent surface. Provide a semi-rough, clean surface. It should not be covered with a sanded brown coat on ceilings.

Finish coat must never exceed ¼ inch in thickness. Provide furring and lathing where more than ¾ inch of plaster is required or ornamental plaster is suspended.

DIRECTIONS—***(See Master Specifications, p. 26).***

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—From 90 to 120 sq. yds. to the ton depending upon regularity of concrete surface and thickness applied.

Note—*See "Covering Capacity," page 2.*

PREPARED GYPSUM FINISHES

USE—Use for finish coat only.

BRANDS—**Note**—*See "Brands," Page 2.*

Trowel Finishes
Red Top* Trowel Finish.
Red Top Universal* White Trowel Finish.
Red Top Adamant* White Trowel Finish.
Red Top Adamant Slate Colored Trowel Finish.
Red Top Adamant IXXX Trowel Finish.
Red Top Badger* Gray Trowel Finish.

Sand Float Finishes
Red Top* Silica White Sand Float Finish.
Red Top Adamant Gray Sand Float Finish.
Red Top Adamant White Sand Float Finish.
Red Top Sand Float Finish (Light Gray).

DESCRIPTION—Prepared Gypsum Finishes require only the addition of water to make them ready for use.

Made of gypsum, they form a perfect and natural bond with any gypsum plaster base coat.

The sand float finishes contain selected sharp, clean silica sand, properly graded, screened and thoroughly dried, thus assuring a uniform mix of correct proportion. They are especially recommended for use in winter when unfrozen sand of the requisite quality is difficult to obtain. Decorations may safely be applied as soon as the finish dries out.

DIRECTIONS—***(See Master Specifications, pp. 26, 27, 28).***

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions Gypsum Trowel Finish, if mixed and applied in accordance with standard specifications, will cover about 350 to 400 yds. per ton; Gypsum Sand Float Finish about 250 to 275 yds. per ton.

ORIENTAL* INTERIOR COLORED FINISH PLASTER

USE—Use for textured or floated plaster finish coat.

DESCRIPTION—Oriental Interior is a colored finish plaster. The material is made in thirteen standard shades and white. Tints are produced with mineral colors, great care being taken to assure absolute uniformity of shade. It is ready for use with the addition of water only.

With ordinary tools, attractive, tinted, float, textured tile and stone finishes may be obtained.

The positive regulation of color insures walls with the minimum amount of "joinings" and avoids the danger of inaccurate mixing.

DIRECTIONS—***(See Master Specifications, pp. 26, 27, 28).***

PACKAGE—Shipped in 100-lb. paper bags. Order Oriental Interior by color name designated on color cards or samples.

COVERING CAPACITY—Approximately 250 to 300 sq. yds. per ton, varying according to textures.

GAUGING PLASTERS

USE—Use for finish coat only in conjunction with lime putty described below.

BRANDS—**Note**—*See "Brands," page 2.*

Slow Set—Red Top* (Gray).
Red Top Star* (White).
Red Top Superfine Finishing (White).

Quick Set—Red Top* (Gray).
Red Top Champion* (White).
Red Top Kings Diamond* (White).
Red Top NYC Mills*.
Red Top Quick Setting.
Red Top Fast Setting.

*Registered Trade-Mark

GAUGING PLASTERS (Cont'd.)

DESCRIPTION—These plasters are made of raw materials carefully selected from gypsum deposits unusually well suited for plasters for this purpose.

Aside from saving time, gauging plasters are far more satisfactory than screened cement plaster.

They are made in both "slow set" and "quick set," and are uniformly ground to just the right fineness to insure easy working and mixing qualities.

Gauging plasters used according to directions contribute early hardness and freedom from shrinkage cracks.

DIRECTIONS—Full directions for mixing and application are given under Finishing Lime.

PACKAGE—Shipped in 100-lb. paper bags. Also shipped in 250-lb. (230 lb. net) barrels and 320-lb. (300 lb. net) barrels.

COVERING CAPACITY—Under average conditions one ton of Gauging Plaster, mixed with two tons of dry hydrated lime by weight, will cover about 1000 to 1400 sq. yds.

FINISHING LIME

USE—Use finishing lime for finish coat only in conjunction with Gauging Plaster or Keene's Cement.

BRANDS—Note—*See "Brands," page 2.*

Hydrated Finishing Lime
Red Top Ivory*.
Red Top Grand Prize*.
Red Top.
Cheshire* Hydrate (High Calcium).
Plastimax* Finishing Hydrate (High Calcium).

Finishing Quicklime
Cheshire* Quicklime (High Calcium)—in Lump, Pulverized and Superfine.
Peerless Quicklime (High Calcium)—in Lump and Pulverized.

DESCRIPTION—These limes are specially prepared for finishing purposes. They possess a rich plasticity that makes them spread easy and far; hence they save time and labor.

Hydrated lime saves the time and trouble of slaking and screening lime on the job.

The Red Top Hydrated brands are made from the famous Ohio dolomite which, with USG standards of manufacture, produce a lime unexcelled for finishing purposes.

They are of a snowy white color and are absolutely free from "pops" and "pits." They meet the standard specifications for hydrated lime of the American Society for Testing Materials and are accepted for United States Government construction without specific tests on the certification of the United States Gypsum Co. that the lime conforms with government requirements.

Plastimax lime is a specially processed quick-soaking hydrate.

Cheshire Quicklime is wood burned and of exceptional quality. Because of the exceeding purity and the physical characteristics of the stone, this lime is unusually quick slaking. It has a high putty yield.

DIRECTIONS—*(See Master Specifications, pp. 26, 28).*

PACKAGE—Hydrated Lime is shipped in 50-lb. paper bags. (Plastimax in 40-lb. bags.)

Quicklime is shipped in 180-lb. and 280.-lb. net weight wood barrels and steel drums, also in bulk. The Cheshire Finish Quicklime is shipped also in 80-lb. and the Peerless Quicklime in 50 and 100-lb. Multi-Wall paper moisture-proof bags.

COVERING CAPACITY—Under average conditions one ton of Red Top Hydrated Lime, when used with the proper proportions of gauging plaster, should finish from 500 to 700 sq. yds.

A ton of Quicklime, when used with gauging plaster, should finish about 1000 yards.

RED TOP* KEENE'S CEMENT

USE—Use for high grade plasterwork, particularly to receive fine decorative treatment and where the utmost in hardness, density and sanitation is desired.

DESCRIPTION—Red Top Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is made from selected gypsum mined at Southard, Oklahoma. It excels in smooth, uniform working qualities and in tensile strength, due to the selected material and the USG improved methods of manufacture and rigid mill inspection.

Keene's Cement is ground to extreme fineness, is pure white in color and takes a very high, glass-like polish. It is impenetrable to rodents and vermin. It is easily cleaned. It contains no alkali to stain delicate wall tints or saponify the oil in paints, hence it is an ideal base for fine decorating.

Beside the standard Keene's Cement, Red Top Keene's Cement is made in three special types: Red Top Casting Keene's; Red Top Scagliola Keene's and Red Top Quick Troweling Keene's.

Red Top Casting Keene's, especially adapted to high class ornamental work, has minimum expansion. It is white, non-staining, non-corrosive, non-acid. It has a final set within two hours.

Red Top Scagliola Keene's is made expressly for the purpose. Initial set is 3 to 6 hours; final set, 15 to 20 hours.

Quick Troweling Keene's is always used with lime putty for finish plaster. Its rapid set permits application and finish troweling in one operation. Setting time is within two hours, when final troweling should be given.

DIRECTIONS—*(See Master Specifications, pp. 26, 27).*

PACKAGE—Shipped in 100-lb. paper bags.

COVERING CAPACITY—Under average conditions one ton of Keene's Cement, when used neat and in accordance with specifications, will cover about 400 to 500 sq. yds.

*Registered Trade-Mark

RED TOP (ARIDIZE*) MOULDING PLASTER

USE—Use for ornamental moulded plaster work.

BRANDS—Note—*See also "Brands," page 2.*

Red Top* (local moulding).
Red Top No. 1 (White).
Red Top No. 2 (White).
Red Top King's Diamond (White).
Golden Seal (White).

DESCRIPTION—The requirements for moulding plaster are distinctly different from any other class of plaster.

Gypsum deposits suitable for making material of this particular type are exceedingly rare.

Aridize Moulding Plasters are made from selected gypsum ideal for the purpose and unequaled for whiteness and purity. This, together with the special patented process of manufacture, produces a particularly smooth working plaster of absolutely uniform setting quality.

These plasters are ground much finer than other similar products, assuring a more thorough solution and a finer surface to the finished work. The fine satin-like surface increases the life of the moulds.

In addition to these qualities, the plasters are cooler working and slower setting, which accounts for low expansion and absence of warped moulds. The slow generation of heat in setting insures protection to gelatine or glue moulds. Slow setting gives time for blending and working out trapped air bubbles and working the plaster into angles and corners of moulds.

Even when green, moulds made of these plasters possess great strength, and breakage by handling and manipulation in the moulding and casting stage is diminished.

DIRECTIONS—*(See Master Specifications, p. 28).*

PACKAGE—Shipped in 100-lb. paper bags; 250-lb. (230 lb. net weight) barrels and in 320-lb. (300 lb. net weight) barrels.

ORIENTAL EXTERIOR STUCCO

DESCRIPTION—Oriental Exterior Stucco is a completely factory-mixed exterior stucco material of the highest quality. The finish coat is scientifically colored in a wide range of tints. It is the product of careful and thorough investigation and research by the United States Gypsum Company.

Oriental Exterior Stucco Finish is furnished in white and eleven standard colors. Water only needs to be added at the job. A uniform color and correct mixture are assured by machine mixing at mill, entirely eliminating the unavoidable variations which occur when stucco is hand-mixed on the job.

Bases—Oriental Exterior Stucco should be applied over stucco mesh weighing not less than 1.8 lb. per sq. yd. or self-furring diamond mesh metal lath weighing not less than 3.4 lb. per sq. yd.

Base Coat—Oriental Exterior Stucco Base Coat is a specially prepared, factory-mixed, permanent, water-resistive base for Oriental Exterior Stucco Finish, with the correct proportion of uniformly graded, selected sand, and other ingredients added to make it plastic.

Being made ready for use by the addition of water only, it is economical of time and labor and assures a base of uniform suction and strength.

Finish Coat—Oriental Exterior Stucco Finish is mixed with mineral colors and prepared ingredients that make it water-resistive. The formula used is based upon methods used in producing the famous Old World stuccoes and one successfully used in America for 25 years.

CHARACTERISTICS—Oriental Exterior Finish sets slowly enough to permit proper finishing, thus avoiding unsightly streaks or shading. It is easy to achieve the smooth trowel, stipple, sponge, rough cast, period textures or spatter-dash finishes.

Oriental Stucco Finish increases in hardness, strength and water resistive qualities with age.

NOTE—*Oriental Exterior Stucco Finish may be applied over standard portland cement base coats.*

USE—Use for base and finish coats of exterior white or colored stucco of the highest quality.

PACKAGE—Oriental Exterior Base Coat is shipped in 100-lb. paper bags, and Oriental Exterior Finish Coat is shipped in 100-lb. paper bags. Order Finish Coat by the number on color cards or samples.

COVERING CAPACITY—

NOTE—*See "Covering Capacity," page 2.*

Base Coat—The approximate covering capacity of one ton of Oriental Exterior Stucco Base Coat (scratch and brown coats) on the basis of the average job, is as follows:

Plastering surface	Brick and clay tile	Metal lath	Wire fabric	Cement and cinder tile	Concrete
Sq. yd. per ton	20 to 25	25 to 30	22 to 28	20 to 22	20 to 25

Finish Coat—One ton of Oriental Exterior Stucco Finish, not to exceed ¼ in. in thickness, will cover from 150 to 200 sq. yds., depending on the texture selected.

*Trade-Mark

PLASTERING BASES

• • •

PERFORATED ROCKLATH* · FIREPROOF LATH

Qualified for One Hour Fire Rating

DESCRIPTION—In Perforated Rocklath the United States Gypsum Company offers the building industry an improved gypsum lath.

In appearance this lath is like other bundled Rocklath except for the perforations which give it its distinctive qualities. These consist of perforations spaced at regular intervals throughout the surface of lath. These perforations provide "mechanical" keying of plaster in addition to the already superb bond of plaster to the surface of the lath.

The outstanding advantage of Perforated Rocklath is its added resistance to the progress of fire. It has all the advantages of Rocklath including maximum bond with plaster, economy, and non-combustibility. Its plus value is persistence of the bond between the lath and plaster for a longer time after having been attacked by fire.

ONE HOUR FIRE RATING—Tests run at the U. S. Bureau of Standards on a partition lathed in the approved manner with Perforated Rocklath and plastered with a full half inch of Gypsum Plaster demonstrated that this construction had sufficient fire resistance to stand up in a typical building fire test for one hour.

SIZES, WEIGHTS, ETC.—Perforated Rocklath is made ⅜ in. thick and in two sizes—16 x 32 in. and 16 x 48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32-in. boards contains 21⅓ sq. ft. and weighs about 30 lb.; each bundle of 48-in. boards contains 32 sq. ft. and weighs about 45 lb.

Either size provides the usual vertical joint break without cutting for framing members 16 inches o. c.

SPECIFICATIONS—See Master Specifications, pages 24 and 26 for application of Rocklath and plastering.

ROCKLATH

Rocklath is a solid sheet of gypsum, ⅜ in. thick, 16x32 in. and 16x48 in., encased in a tough fibrous covering, forming a uniform, strong, fireproof plaster base. The fibrous covering affords uniform suction, insuring a permanent, strong bond with gypsum plaster. Rocklath is easily and quickly nailed to wood studding, furring or joists. It saves plaster and protects the framework from the unnecessary absorption of moisture and the warping that may result from it. It does not stain plaster nor create lath marks.

Rocklath has the USG* patented rounded reinforced folded edge which gives maximum strength, protects the boards, and does not injure the hands.

SIZES, WEIGHTS, ETC.—Rocklath is made ⅜ in. thick and in two sizes—16x32 in. and 16x48 in. The boards are packed in bundles for easy handling and stacking—6 sheets to the bundle. Each bundle of 32 in. boards contains 21⅓ sq. ft. and weighs about 30 lbs.; each bundle of 48 in. boards contains 32 sq. ft. and weighs about 45 lbs.

Either size provides the usual vertical joint break without cutting for framing members 16 inches O. C.

SPECIFICATIONS—See Master Specifications, pages 24 and 26 for application of Rocklath and plastering.

*Registered Trade-Mark

INSULATING ROCKLATH

Insulating Rocklath is standard ⅜ in. Rocklath upon the back of which is mounted a thin, smooth, bright sheet of aluminum foil. Applied with the foil side next to framing members and facing a dead air space, its insulating value is equal to or better than that of a half-inch thick fiber insulating lath.

The insulating efficiency of Insulating Rocklath is based on these facts. Heat passing through the walls or roof of a frame building (from inside out or from outside in) must pass across the air space between the studs and rafters. Approximately seventy-five per cent of such heat travel is by radiation. Insulating Rocklath resists the passage of radiant heat. In summer it resists heat by reflecting it back as a mirror reflects light. In winter time, when the heat flow is outward, Insulating Rocklath insulates by reducing the flow of heat by radiation.

The efficiency of bright surfaces, such as that on the back of Insulating Rocklath, to reflect radiant heat, or to refuse to emit heat by radiation has been conclusively proved in laboratory tests.

SIZES, WEIGHTS, ETC.—Same as Bundled Rocklath.

SPECIFICATIONS—See Master Specifications, pages 24 and 26, for application of Rocklath and plastering.

ADVANTAGES OF ROCKLATH

FIREPROOF—Does not burn or readily transmit heat. It interposes a continuous fireproof sheet of substantial thickness over the wood frame, thus tending to confine the fire to the room in which it originates. Does not disintegrate or corrode.

NO EXPANSION OR CONTRACTION—Does not expand, warp or buckle when wet plaster is applied, consequently will not shrink when plaster dries out.

EXCEPTIONALLY STRONG PLASTER BOND—The strong fiber covering with its uniform suction prevents the plaster from "slipping" when applied. Gypsum plaster is easily applied and bonds more firmly to Rocklath than to other types of lath. Because there is no sap in Rocklath, there is no consequent discoloration.

In U. S. Bureau of Standards' Tests a pull of six pounds per square inch was required to separate the plaster from the gypsum lath, providing a factor of safety of 144.

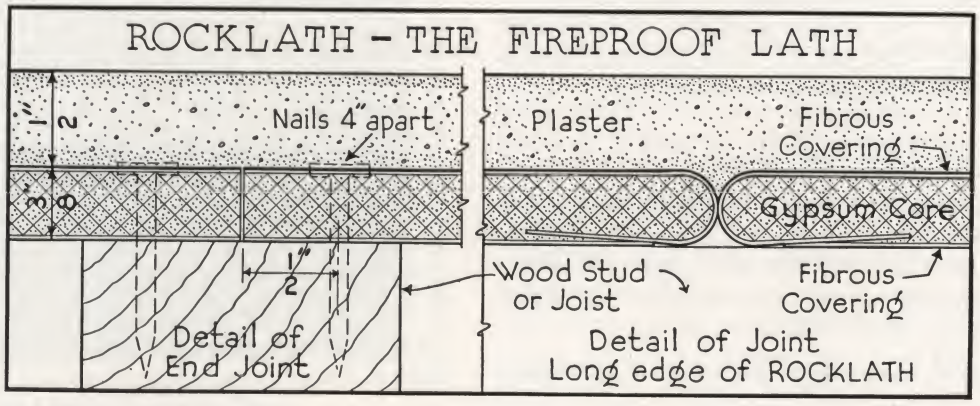
ECONOMY IN ERECTION—Compared with ordinary lath, Rocklath bundles are stacked and carried and the light weight units handled and erected quicker and with greater ease—there are no splinters. One piece of Rocklath equals 9 wood laths and requires 15 to 20 nails, depending on the size of the lath unit, instead of 27 or 36. One man will erect an average of from 125 to 150 sq. yds. a day compared with 100 to 115 sq. yds. with wood lath. It scores and cuts cleanly and easily without waste.

UNIFORM THICKNESS — Since no plaster is lost through droppings pushed through the lath and the ragged keying plaster behind the lath, the thickness is uniform throughout and approximately 20% less plaster is required.

ELIMINATES MOISTURE—Rocklath needs no wetting before plaster is applied. The continuous dry gypsum sheet, ⅜ in. thick, eliminates its proportionate part of the usual wet plaster moisture and at the same time seals off the applied plaster moisture from contact with the absorptive wood framing, preventing much of the usual swelling and subsequent shrinkage.

Since there is less moisture present, the plaster and building are dry and ready for the application of interior wood trim and decorating in the minimum time.

COMPARATIVE COST—The completed wall (Rocklath and plaster) costs less than metal lath and plaster, and about the same as wood lath and plaster.



METAL LATH and ACCESSORIES

INTRODUCTION

That the United States Gypsum Company might furnish all materials required for lathing and plastering, it acquired the metal lath division of the Youngstown Pressed Steel Company and the North Western Expanded Metal Company, both for many years well and favorably known in the industry. As a result, those whom the company serves have the advantages of mixed car shipments and of centralized responsibility.

The high quality products of the two metal lath companies will be found in the Red Top Line of Metal Lath Products. In addition, the Red Top Line includes many special accessories. All brands and types of metal are distinctly tagged for identification.

NOTE—*For application, see Master Specifications, pages 23 and 24.*

RED TOP* DIAMOND MESH LATH (JUNIOR MESH)

Description—A small (5/16" x 9/16") diamond mesh expanded metal lath (patented). The stiff sheets are easy to erect.

The small mesh enables the lather to engage a greater number of strands in nailing or tying, yet the "diamonds" are amply large to freely admit the tie wire.

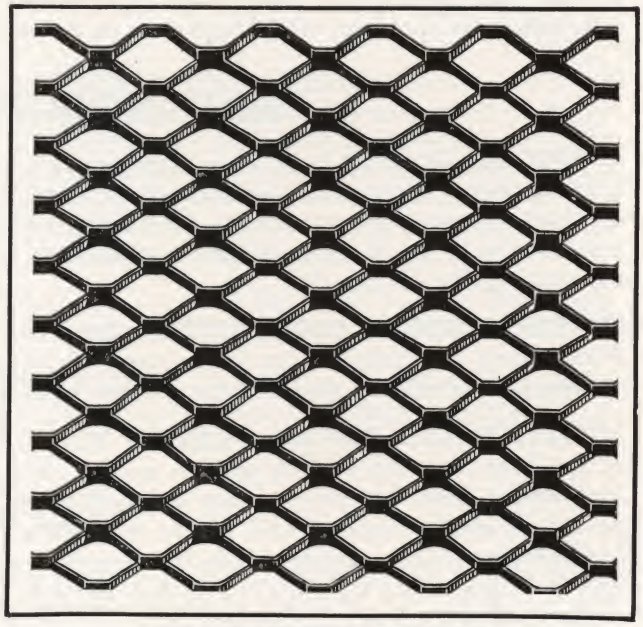
Mortar spreads easily on the smooth stiff surface, without waste and the small mesh affords a superbly keyed bond.

Weights—2.2, 2.5, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black in all weights. (2) Galvanized steel in 2.5 and 3.4 lb. weights. (3) Copper bearing steel (so tagged), painted black in 3.0 and 3.4 lb. weights. (4) Armco Ingot Iron (so tagged), painted black in 3.4 lb. weight.

Self-furring and Corrugated—All above weights and materials furnished in the Self-furring and Corrugated types.

Sheet Size—27 x 96 in., packed 10 sheets (20 sq. yds.) per bundle. Also size 24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle on order.



RED TOP DIAMOND MESH LATH

RED TOP 1/8 in. Z-RIB LATH (Flat Rib)

Description—A distinctive type of flat rib lath for nailing on wood construction or tying on metal furring.

The narrow "Z" ribs (1/8 in. deep, 1 1/2 in. o.c.) add exceptional rigidity and provide shelves which hold the wet plaster in place, both front and back, without waste.

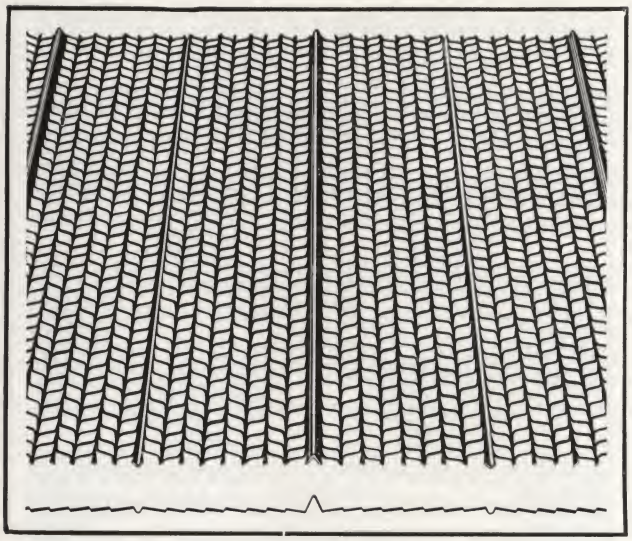
Weights—2.75, 3.0, 3.4 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Galvanized steel in 3.4 lb. weight. (4) Armco Ingot Iron (so tagged) painted black, in 3.4 lb. weight on special order.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP 1/8 IN. Z-RIB LATH

*Trade-Mark



RED TOP ⅜ IN. RIB LATH

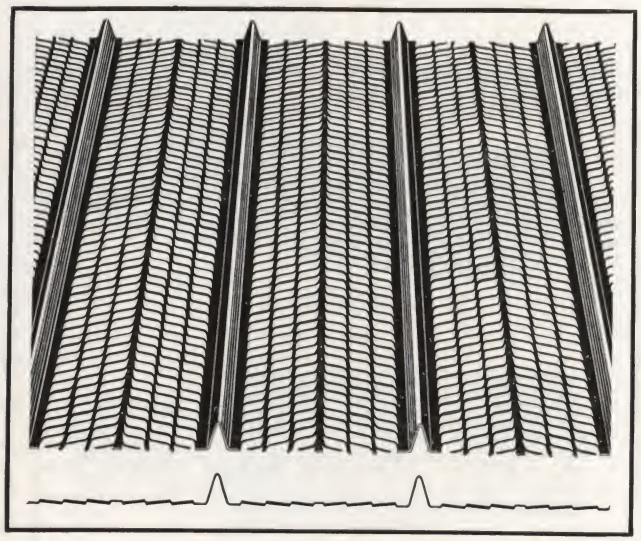
RED TOP ⅜ in. RIB LATH

Description—A very rigid reinforcement for use in floor and ceiling construction with steel joists, also ceilings under steel tile construction and where wide spacing of supports is desired. It provides for nested lap at the outside ribs with no lumps. Its use assures a permanent, economical and absolutely satisfactory result in every way.

Weights—3.0, 3.4, 4.0 lb. per sq. yd.

Materials—(1) Open hearth steel, painted black, in all weights. (2) Copper bearing steel (so tagged), painted black, in 3.4 lb. weight. (3) Armco Ingot Iron (so tagged), painted black, in 3.4 lb. weight. (4) Galvanized steel in 3.4 lb. weight.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.



RED TOP ¾ IN. RIB LATH

RED TOP ¾ in. RIB LATH

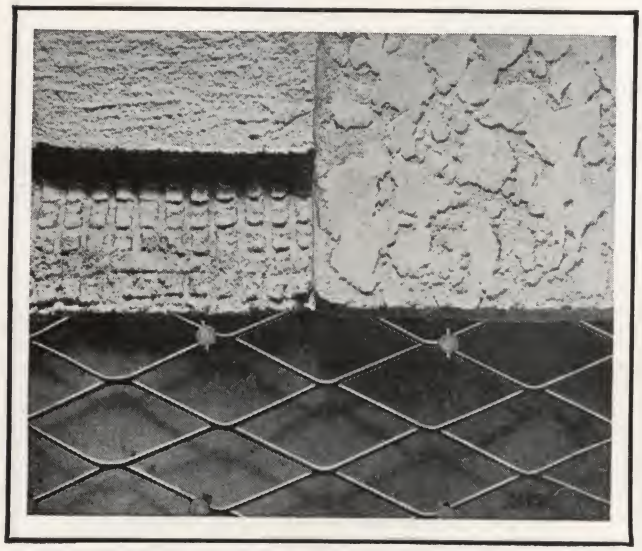
Description—The exceptional stiffness (ribs ¾ in., 4.8 in., o.c.) of this heavy weight, self-furring, expanded metal lath adapts it particularly for centering and reinforcement for concrete roofs and floors, and for plaster partitions and ceilings on extremely wide spacing of supports. Advantageously used on many forms of special work, such as column and beam protection, balconies, concrete tanks and fences, etc.

Weights—.50 (28 ga.), .60 (26 ga.), .75 (24 ga.) lb. per square foot.

> **Note**—*¾-in. Rib Lath is sold by the square foot. All other lath types sold by the square yard.*

Materials—(1) Open hearth steel, painted black. (2) Copper bearing steel (so tagged), painted black (on special order only).

Sheet Size—24 in. wide, 8, 10 and 12 ft. long (other lengths on special order).



RED TOP EXPANDED STUCCOMESH

RED TOP EXPANDED STUCCOMESH

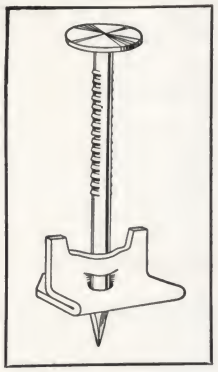
Description—An expanded metal reinforcement for exterior stucco, cold-drawn from the highest grade of copper bearing steel into diamond mesh 1⅜ x 3⅛ in. wide. Its diagonal strands provide a correct distribution of steel to overcome the initial shrinkage, temperature changes and wind stresses, and a positive protection against unusual shocks. Apply with Red Top Economy Stucco Furring Nails.

Weights—1.8, 3.6 lb. per sq. yd.

Materials—Copper bearing steel (so tagged), painted black. (Plain steel and galvanized steel on order.)

Sheet Size—48 in. wide x 99 in. long. Packed 10 sheets (36⅔ square yards) to the bundle.

STUCCO FURRING NAILS



Description—A special nail for applying and furring Red Top Stuccomesh illustrated on page 10. It provides a furring device with sliding spacer and rib, which securely holds the reinforcing mesh free of the sheathing in the center of the stucco slab.

Size—1½-in. nail, ⅜-in. spacer.

Packed—Packed 850 nails per box, 10 boxes (8500 nails) per case. One box is estimated as sufficient for 50 sq. yds.

RED TOP BOSTWICK SHEETLATH

Description—A stiff, heavy weight sheet lath particularly adapted to reinforcement of plaster, cement reinforcement for tile, marble, etc.

Materials and Weights—Open hearth steel, painted black, 4.5 lb. per sq. yd. Galvanized steel, 5.2 lb. per sq. yd.

Sheet Size—24 x 96 in., packed 9 sheets (16 sq. yds.) per bundle.

RED TOP CORNERITE

Description—A quality, factory formed product—Diamond Mesh Metal Lath Angle, used over wood lath, gypsum lath and masonry, at all angles where wall meets wall and walls meet ceiling. Furnished in painted or cut from galvanized steel.

Size and Weight—3 x 3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 125 lb. per 1000 ft.

RED TOP STRIPLATH

Description—Diamond Mesh Lath Strips. Used to cover sections of walls and ceilings where there are joints in the construction which might cause plaster cracks. Should be used around window and door frames when metal lath is not used for plaster base.

Size and Weight—3 x 96 in., packed 504 ft. per bundle. (Other sizes on order.) 60 lb. per 1000 ft.

BASE SCREEDS and PICTURE MOULD

Description—Base screeds form a dividing line and screed between plaster walls and cement or composition base. A concealed picture mould and screed.

Material—Galvanized steel of 26 gauge.

TYPES and WEIGHTS

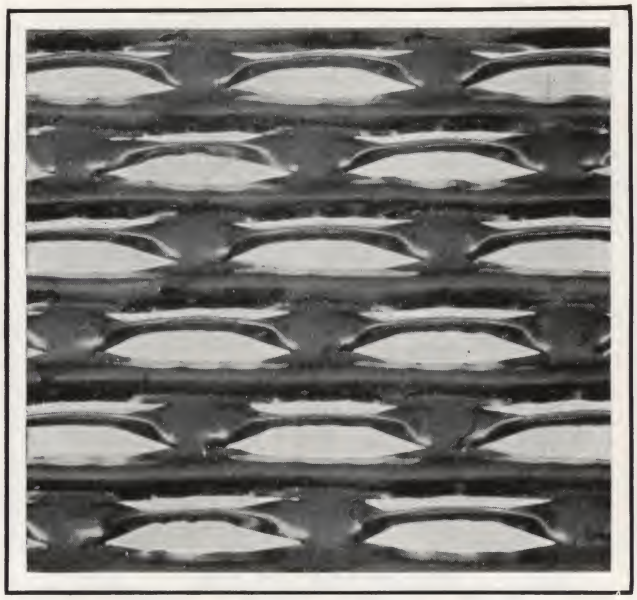
No. 3A—Expansion Flush Screed, $\frac{9}{16}$-in. ground; weight 230 lb. per 1000 lin. ft.

No. 6A—Plain Screed, ½-in. ground; weight 160 lb. per 1000 lin. ft., ⅝ and ¾-in. ground on order.)

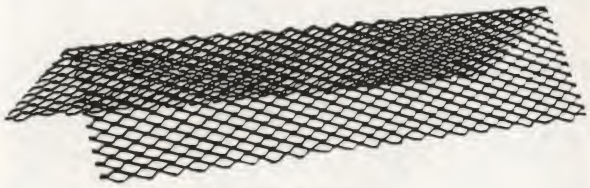
No. 7A—Curved Point Screed, ½-in. ground; weight 195 lb. per 1000 lin. ft.

No. 8A—Picture Mould; weight 260 lb. per 1000 lin. ft.

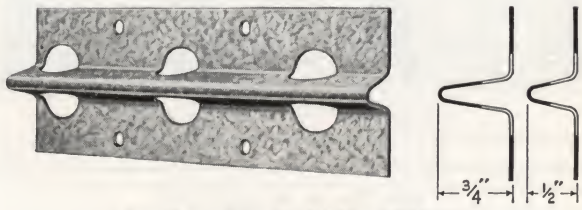
Packed—Packed 10 pieces per bundle.



RED TOP BOSTWICK SHEETLATH

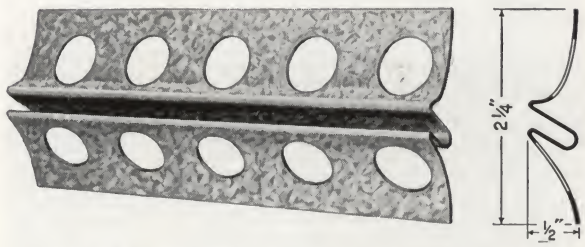


CORNERITE

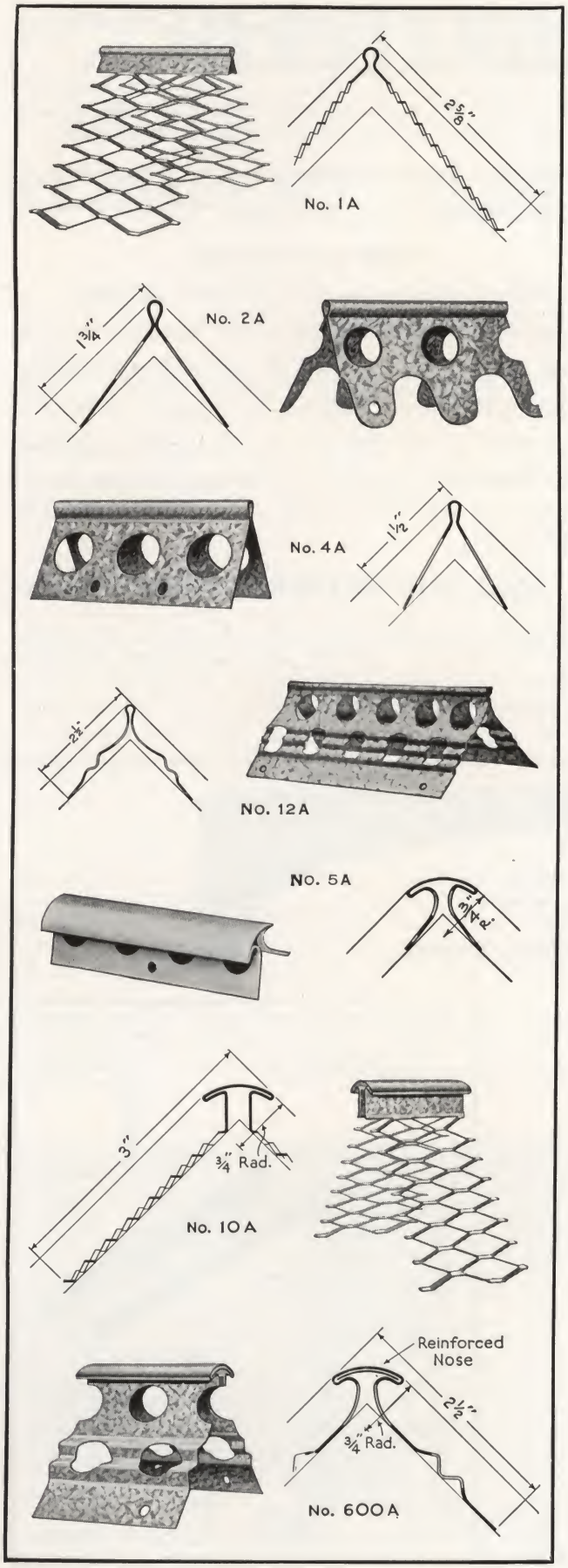


No. 6A PLAIN BASE SCREED

No. 7A CURVED POINT BASE SCREED



No. 8A CONCEALED PICTURE MOULDING



RED TOP CORNER BEADS

Description—A complete line of standard, high grade corner beads adapted to every construction need.

Material—Galvanized steel 26 gauge. 24-gauge material also furnished on special order.

SMALL NOSE CORNER BEADS TYPES and WEIGHTS

No. 1A—2½-in. Expansion Flange Type—250 lb. per 1000 lin. ft.

No. 2A—1¾-in. Short Scalloped Flange Type—220 lb. per 1000 lin. ft.

No. 4A—1½-in. Flange Standard Type—200 lb. per 1000 lin. ft.

No. 12A—2½-in. Wide Flange Type—350 lb. per 1000 lin. ft.

No. 16A—2½-in. Wide Scalloped Flange Type—320 lb. per 1000 lin. ft.

BULL NOSE CORNER BEADS TYPES and WEIGHTS

No. 5A—Short Flange ¾ in. Radius Bull Nose—245 lb. per 1000 lin. ft.

No. 10A—2½-in. Expansion Flange ¾ in. Radius Bull Nose—375 lb. per 1000 lin. ft.

No. 80A—2½-in. Expansion Flange 1½ in. Radius Bull Nose—1000 lb. per 1000 lin. ft.

No. 90A—2½-in. Expansion Flange 2 in. Radius Bull Nose—1050 lb. per 1000 lin. ft.

No. 600A—2½ in. Solid Flange ¾ in. Radius Bull Nose—reinforced nose—570 lb. per 1000 lin. ft.

No. 603A—2⅞ in. Solid Flange 1½ in. Radius Bull Nose—reinforced nose—900 lb. per 1000 lin. ft.

No. 14A—2½ in. Solid Flange ¾ in. Radius Bull Nose—non-reinforced nose—420 lb. per 1000 lin. ft.

Packed—Crated approximately 500 lineal feet per crate, or packed 10 pieces per bundle. Expansion Beads crated only.

NO. 9A HUMP CLIPS

A 3-inch clip attachment for short flange beads to facilitate erection. Made from blued steel. Used generally with No. 5A Bull Nose Bead. Packed in boxes of 1000 each weighing 25 pounds.

RED TOP METAL ARCHES

Description—A ready-formed plastering arch for doorways, etc. Eliminates two difficult operations—the construction of curved wooden forms and the forming of corner beads around these curves. They are made for standard 2 x 4-in. partitions. The various units have many obvious combination possibilities.

Manufactured under License of Merryweather Patent No. 1782147 granted Nov. 18, 1930.

TYPES and SIZES

No. 11—10-in. radius (true half circle) for 20-in. opening (21½-in. stud space).

No. 22—15¾-in. radius (true half circle) for 30-in. opening (33-in. stud space).

No. 33—Gothic design for 2 ft. 6 in. opening (33-in. stud space).

No. 44—Gothic design for 4 ft. 0 in. opening (51-in. stud space). (Can be easily cut down to fit a 42-in. doorway.)

No. 55—Elliptic design for 5 ft. 0 in. opening (63-in. stud space).

No. 66—Elliptic design for 6 ft. 0 in. opening (72-in. stud space).

Material—"Galvannealed" sheet steel.

Packed—In individual one-set cartons.

RED TOP COLD ROLLED CHANNELS

Description—A complete line of cold rolled channels for furring, suspended ceiling and partition construction. The legs and webs are true and have square corners. They can be readily spliced and formed.

Material—Open hearth steel.

Stock Lengths—14, 16, 18, 20 feet.

SIZES and WEIGHTS

Note—*Sold only in full, unbroken bundles.*

¾ in.—276 lb. per 1000 lin. ft.; 20 pieces to bundle.

1 in.—332 lb. per 1000 lin. ft.; 10 pieces to bundle.

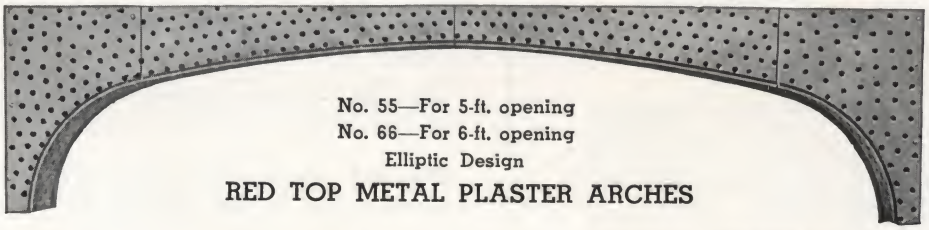
1½ in.—442 lb. per 1000 lin. ft.; 10 pieces to bundle.

2 in.—553 lb. per 1000 lin. ft.; 10 pieces to bundle.

Box Channels—$\frac{9}{16}$ x $\frac{11}{16}$ in., 276 lb. per 1000 lin. ft., packed 20 pieces to bundle. (16 and 20-ft. lengths only.)

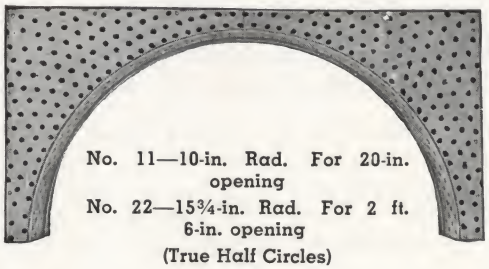
RED TOP LATHING SUNDRIES

General—The USG line of metal lathing specialties is most complete. Besides those here listed and illustrated, many other sundry items needed for lathing application can be furnished.

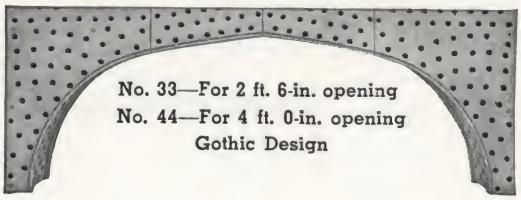


No. 55—For 5-ft. opening
No. 66—For 6-ft. opening
Elliptic Design

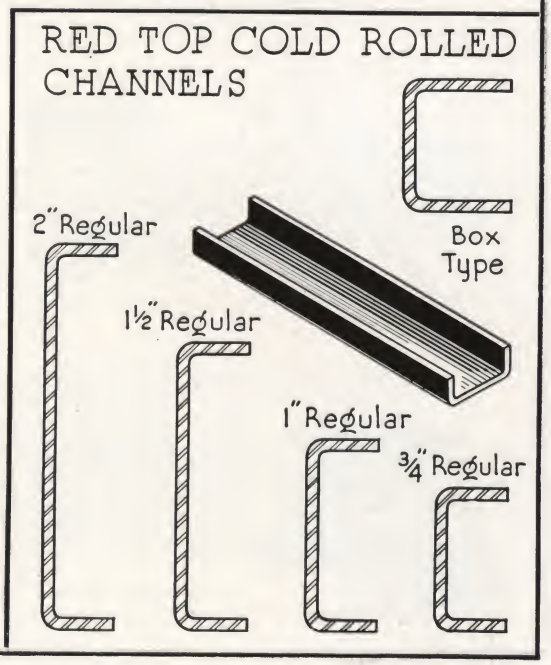
RED TOP METAL PLASTER ARCHES



No. 11—10-in. Rad. For 20-in. opening
No. 22—15¾-in. Rad. For 2 ft. 6-in. opening
(True Half Circles)



No. 33—For 2 ft. 6-in. opening
No. 44—For 4 ft. 0-in. opening
Gothic Design



PLASTERING SYSTEMS

• • •

RESILIENT PLASTERING SYSTEMS

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GENERAL DESCRIPTION

The USG Resilient Plastering Systems are an adaptation of the highly successful USG Sound Control System of resiliently connected walls, ceilings, and floors. This adaptation permits Rocklath (gypsum lath units) or metal lath and plaster to be connected to wood or steel framing or furring members of walls, partitions, and ceilings by means of spring clips which form a floating unit. There are two distinct types of the USG Resilient Plastering System—namely, that using Rocklath for a plaster base and that using Red Top Metal Lath as a plaster base as detailed on pages 15 and 17.

ADVANTAGES

REDUCES PLASTER CRACKS — Ordinary settlement and movement in the structural framing is not transmitted to the plastered walls and ceilings because of the free floating construction.

STOPS SOUND—Sound that strikes the plaster finish and sets it in vibration is largely dissipated by the springs supporting the lath. Instead of the construction vibrating as a unit and thus setting up sound waves on the opposite side of the partition or ceiling, the lath and plaster finish vibrates as a unit suspended on springs more or less separate from its supports.

A partition built according to this specification provides a sound reduction of approximately 51.9 decibels. (This is equal to or better than two 3-in. tile partitions with a 1-in. air space between—a construction often used for its soundproofing efficiency.)

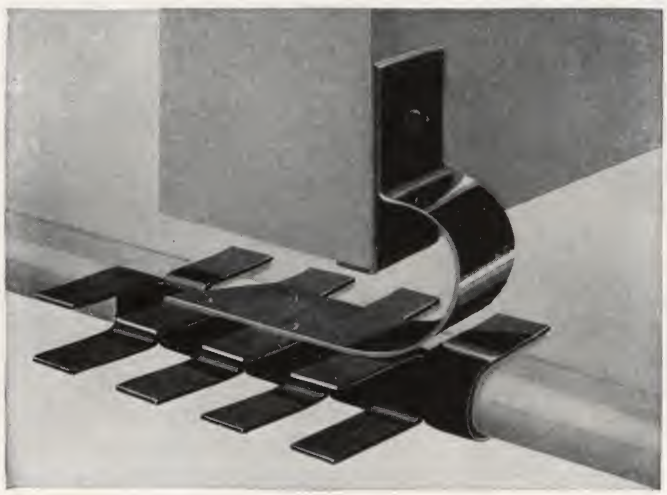
This system is probably even more useful on ceilings than walls. Its feature of resilient action is very effective against ceiling cracks. It also eliminates lath marks and provides efficient sound insulation between stories.

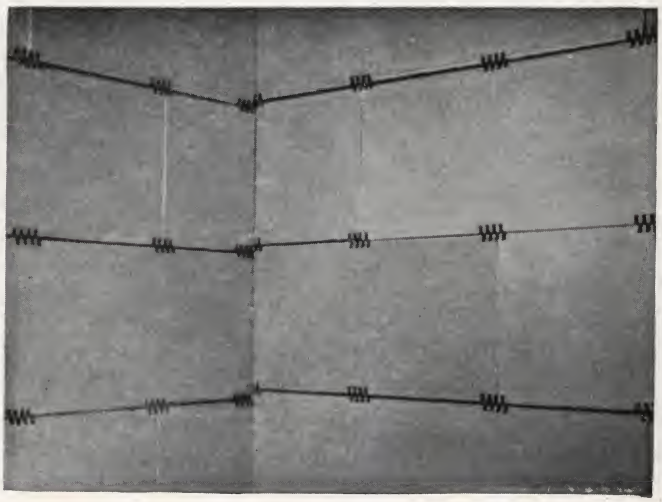
ELIMINATES STREAKING—The floating construction prevents the formation of lath and joist marks that otherwise develop due to differences in heat passage.

FIREPROOF—All materials used in this construction are fireproof. See pages 1 and 8 for fireproof qualities of gypsum and Rocklath. Metal lath is likewise a recognized fireproof plaster base.

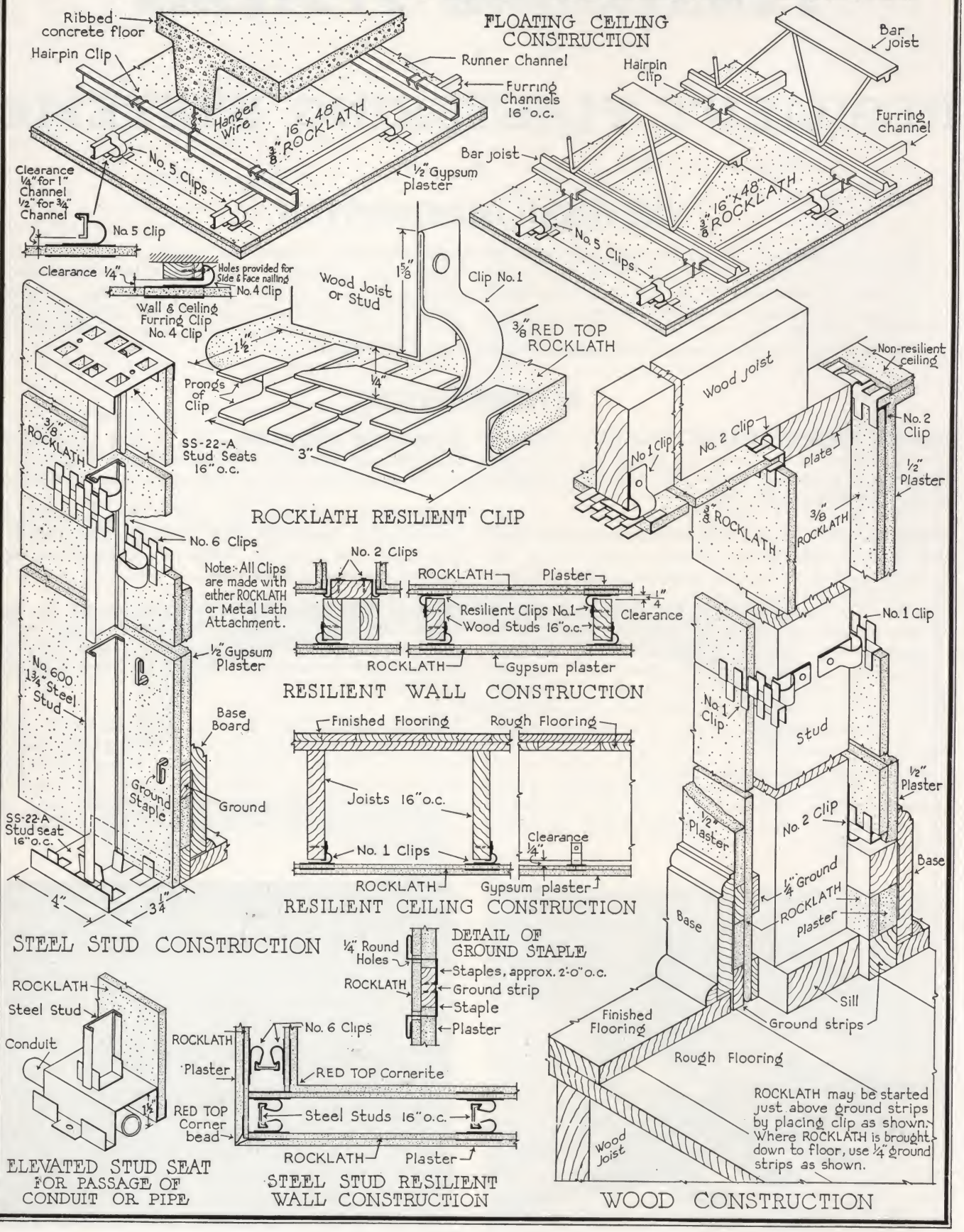
EASILY ERECTED—The system is erected by the lather. The clip is nailed to the wood framing with one Rocklath nail and the Rocklath is set in the clip. In metal lath construction, the lath is wired to pencil rods tied to the clip.

LOW IN COST—The cost of the materials is the same as standard Rocklath and Metal Lath plaster bases plus the addition of the clips, partly offset in the case of the Rocklath wood frame construction by the saving in cost of nails, since only about one-fourth as many nails are required as for the standard Rocklath application.





USG RESILIENT SYSTEM – ROCKLATH DETAILS



Master Specifications

USG ROCKLATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*The following provisions should be included as they apply under the proper headings of the specifications to be executed by others.*

(1a) CARPENTRY WORK—

(1a1) Furring—All masonry surfaces shall be furred.

(1a2) Framing—All studding, joists, and furring shall be set plumb, level, and true, spaced accurately 16 in. on centers.

(1a3) Grounds—(distance from face of framing member to face of finished plaster)—

1⅛ in. for wood framing and steel furring.
1¼ in. for steel stud partitions.
1⅜ in. for suspended or bar joist ceilings using ¾ in. furring channels (1⅛ in. for 1 in. furring channels).

(1a4) Bucks—Furnish wood bucks of sizes detailed at all door openings rigidly attached to steel buck supports.

(1b) ELECTRICAL CONSTRUCTION—All outlet boxes, etc., shall be accurately set with their faces flush with the finished plaster as established in paragraph (1a3) above.

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Rocklath Resilient Plastering System.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top cold rolled channels, 1½ in. for runner channels and ¾ in. for cross and wall furring.

(3c) ROCKLATH METAL PARTITION STUDS—USG No. 600 1¾ in. Cold Rolled Channels furnished with USG Rocklath Resilient Plastering System Stud Seats No. SS-22A.

(3d) GYPSUM LATH—Rocklath, ⅜ in. thick, 16 in. wide, 32 or 48 in. long.

(3e) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Rocklath Resilient Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3f) CORNERITE—3 x 3-in. Cornerite for all internal angles except where Resilient Corner Clips are used.

(3g) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—Starting at the floor, ground strips shall be applied which also serve as a backing for wood trim. A No. 2 clip shall be nailed to the stud with clearance above the ground strip and the Rocklath inserted in the clip. Framing members are spaced 16 in. on center and a clip applied at each framing member. Next place No. 1 clips over the upper edge of the first course of lath units and attach the clips to the studs as above. Continue with successive courses of lath in similar manner, breaking end joints of lath units in alternate courses. A No. 2 Clip shall be used at the angle where the wall meets the ceiling.

(4b) STEEL STUD PARTITIONS—METAL FURRING—

(4b1) Attach metal stud seats to floors and ceilings spaced accurately 16 in. on centers and in line vertically. Set channel studs in seat clips plumb and true.

(4b2) Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced 16 in. o. c. with flange to wall. Secure furring channels to floors and ceilings in a substantial manner. Substantially secure channels to walls, every 3 ft. approximately with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(4b3) Starting at the floor hook No. 6B clips on each channel with the lower prongs of clips resting directly on the floor. In the upper prongs of these clips set the bottom of the first row of gypsum lath units. Place the next row of No. 6B clips over the upper edge of the first course of lath units, each attached to a metal stud. As located, attach ½ in. thick grounds with ground staples to the face of the lath. Continue with successive courses of lath units, breaking end joints in alternate courses securing each with No. 6B clips set over the upper edges each attached to the metal stud. Secure top of the last course of units at the ceiling in the stud seat clips.

(4c) STEEL FURRED OR SUSPENDED CEILINGS—

NOTE—*Construction of furred or suspended ceilings shall be as specified in (B2), pages 22, 23.*

Starting at one side of the ceiling hook a row of No. 5 clips on the flanges of the ¾-in. runner channels. Slip the edge of the first lath course into the clips thus provided. Hook the next row of No. 5 clips over the channel runners spaced 16 in. o. c. and then slip the clip over the outer edges of the lath. Continue successive courses of lath in similar manner, breaking end joints in alternate courses.

(4d) CORNERITE—Use Cornerite only in internal angles where Resilient Corner Clips are not used. Fasten Cornerite to Rocklath with staples placed along outer edge 12 in. on centers, staggered.

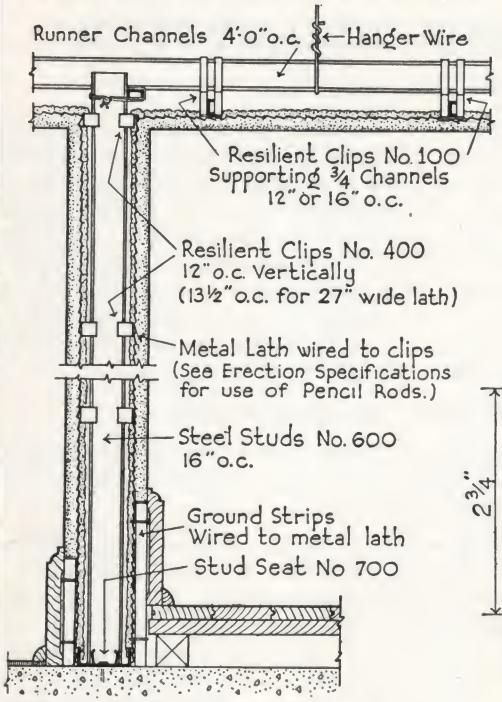
(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(5) PLASTERING

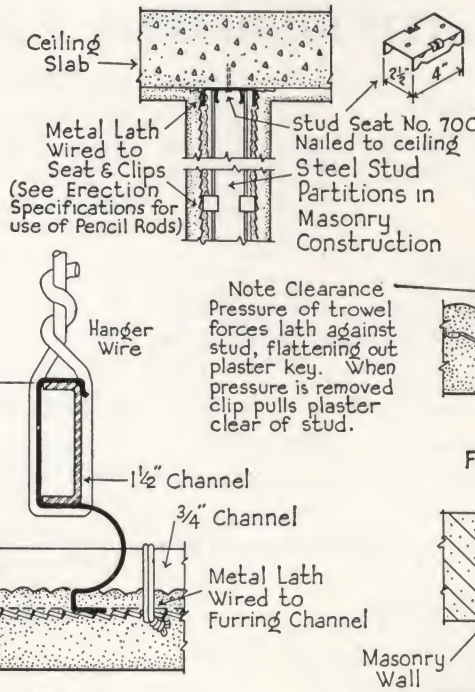
Do not wet lath. Apply plaster in three (3) coats (scratch, brown, and finish) to a full ½ in. thickness. Scratch coat shall be well scratched in to fill all interstices between lath units. Allow scratch coat to set and dry over night before brown coat is applied. (Do not "double back" with brown coat.)

NOTE—*Otherwise plastering shall be applied as specified in Master Specifications, pages 21 to 28 inclusive.*

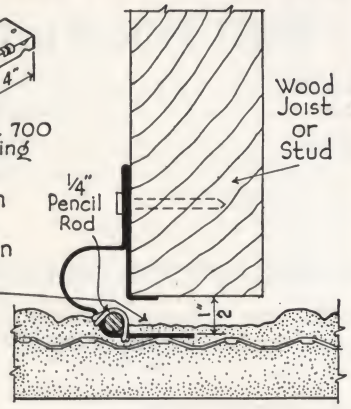
USG RESILIENT SYSTEM — METAL LATH DETAILS



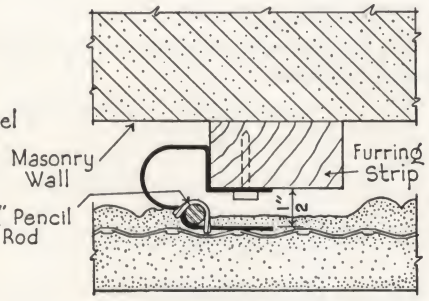
STEEL STUD PARTITION & SUSPENDED CEILING CONST.



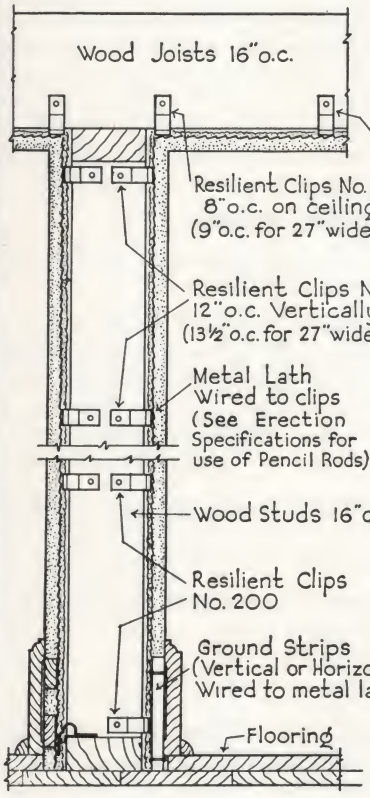
CLIP No. 100
For Suspended Ceilings



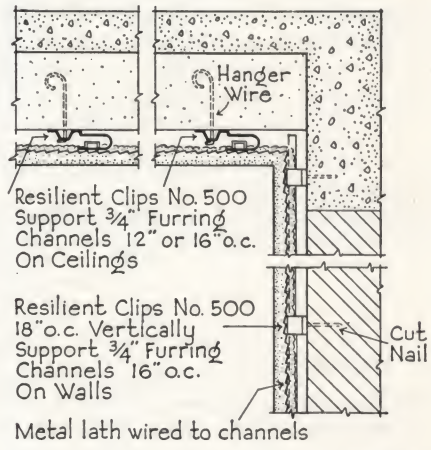
CLIP No. 200
For Wood Construction



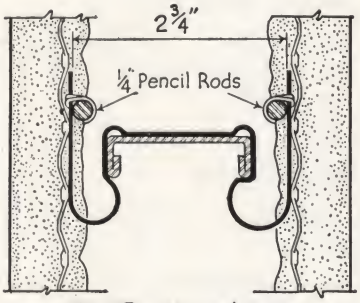
CLIP No. 300
For Wood Furring on Masonry Construction



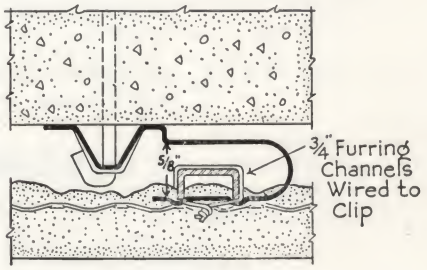
WOOD CONSTRUCTION



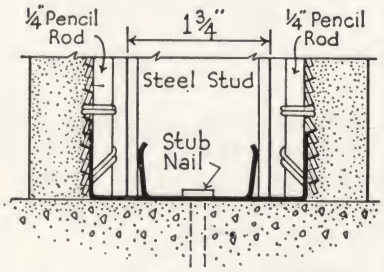
MASONRY CONSTRUCTION



CLIP No. 400
STEEL STUD No 600
For Steel Stud Partitions.



CLIP No. 500
For Masonry Walls and Ceilings



STUD SEAT No. 700
For Steel Stud Partitions

Master Specifications

USG METAL LATH RESILIENT PLASTERING SYSTEM

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Select and include only those clauses which apply to the particular work. Words within brackets in bold face type are selective.*

(1) CORRELATIVE PROVISIONS

NOTE—*Correlative Provisions given in paragraph 1, page 16, applying to Rocklath Resilient Systems, apply also to these specifications.*

(2) WORK INCLUDED

NOTE—*Here list and locate all walls, partitions, and ceilings to be constructed with USG Resilient Plaster.*

(3) MATERIALS

(3a) GENERAL—All materials shall be made by the United States Gypsum Company, 300 West Adams Street, Chicago.

(3b) METAL FURRING—Red Top **[cold] [hot]** rolled channels, 1½ in. for runner channels and **[¾ in.] [1 in.]** for cross and wall furring.

(3c) METAL PARTITION STUDS—Specially designed No. 600 1¾ in. cold rolled steel channel studs with USG Resilient Plastering System stud seats.

(3d) PENCIL RODS—Pencil Rods shall be ¼ in. in diameter.

NOTE—*Pencil Rods are recommended. See detail page 17.*

(3e) METAL LATH—[Specify brand, material and finish] lath; **(?)** lb. for horizontal positions and **(?)** lb. for vertical position.

NOTE—*See (Cld), page 23. Red Top Junior Diamond mesh Lath is recommended—2.5 lb. per sq. yd. for walls and 3.0 lb. per sq. yd. for ceilings of wood construction and 12 in. spacing of furring channels. For 16-in. ceiling furring channel spacing, use 3.4 lb. weight. If Red Top ⅛-in. Z-Rib Lath (Flat Rib) or ⅜-in. Rib Lath are selected, a weight of 3.0 lb. per sq. yd. will be adequate for both walls and ceilings.*

(3f) WIRE—Wire shall be No. 18 ga. Galvanized Annealed Tie wire.

(3g) RESILIENT CLIPS—Clips for attachment of lath to framing shall be USG Resilient Steel Clips. These shall be of such design as to adapt them for use in the field of the lath, angles, for starting and finishing at floors and ceilings, and surrounding windows and other openings.

(3h) CORNER BEADS—[Specify No. and Type] Red Top Galvanized Expanded Metal Corner Beads.

(4) APPLICATION

(4a) STANDARD WOOD FRAMING—[Wood studs] [wall furring] [and] [joists] shall be spaced 16 in. O.C.

(4a1) Starting at the juncture of the wall and ceiling, attach No. 200 clips with 4d common nails through clip nail holes, spacing clips **[16 in. O.C.] [12 in. O.C.] [along studs] [wall furring] [and] [12 in. O.C.] [8 in. O.C.] [along joists].**

NOTE—*For spacings, see Note B under (4a2).*

(4a2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue, fitted into the radius at the shoulder.

NOTE A—*Pencil Rods may, optionally, be run at right angles to the direction of the framing members, wired to the out side face of the clip tongue.*

NOTE B—*Pencil Rods may be eliminated by spacing clips 12 in. O. C. along studs (13½ in. for 27 in. wide lath) and 8 in. O. C. along joists (9 in. for 27 in. wide lath) and attach lath directly to the clips.*

(4a3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].** Lath at junction shall be bent over 6 in. from ceiling on to wall.

(4b) STEEL STUD PARTITIONS—No. 600 Channel Studs shall first be set in No. 700 Stud Seats at top and bottom and then set in position spaced 16 in O.C. Stud Seats shall then be securely nailed to floor and ceiling.

(4b1) Starting at the juncture of the wall and ceiling, attach No. 400 clips to Channel Studs, spaced **[16 in. O. C.] [12 in. O.C.]** by springing the clips (deep throat side first) over the channel flanges.

(4b2) Pencil Rods shall be wired to the back face of the clips, inside the wiring tongue.

NOTE—*See Note B under (4a2) above.*

(4b3) Metal lath shall be wired to **[pencil rods at 6 or 8 in. intervals] [directly to clip faces].**

(4c) MASONRY WALLS, CONCRETE JOISTS, ETC.—No. 500 clips shall be securely attached to **[brick and clay tile walls with 10d cut nails] [Pyrobar walls with 2 in. staples] [concrete slabs or joists by No. 9 ga. wire or a 10d hook nail which has been placed in position before concrete is poured and extending 1¼ in. below the surface].**

(4c1) Spacing of clips along **[walls] [flat concrete slabs]** shall be **[24 in. O.C. for 12 in.] [18 in. O.C. for 16 in.] [15 in. O.C. for 19 in.]** furring channel spacing.

(4c2) Spacing of clips on concrete joists spaced 24 to 26½ in. O.C. shall be 12 in. O.C. along joists.

(4c3) Furring channels, set flat (not on edge) with flanges in contact with the lath, shall be attached to the **[inside] [outside]** face of the clip tongue with a double strand of wire.

(4c4) Metal lath shall be wired to furring channels at 8 in. intervals.

(4d) SUSPENDED CEILINGS—Hanger rods (¼, $\frac{3}{16}$, or $\frac{7}{32}$ in. in diameter) set in concrete forms and cast into concrete shall be spaced 4 ft. O.C. in each direction extending **[give depth of suspended ceiling]** plus 12 in. for tying. 1½-in. runner channels shall be attached to hanger rods.

(4d1) Running at right angles to runner channels, furring channels spaced **[12 in.] [16 in.]** O.C. shall be attached by slipping No. 100 clips over the furring channels and hooking the upper portions of the clips over the runner channels.

(4d2) Metal lath shall be wired to furring channels at 8 in. intervals.

(4e) CORNER BEADS—All external corners shall be reinforced for their full height or length with Corner Beads.

(4f) PLASTERING—

NOTE—*Follow standard specification for plastering over metal lath as given in Master Specification, pages 25 to 28 inclusive. Plaster shall be full ¾ in. from back face of lath to face of plaster.*

USG BRIDJOINT PLASTERING SYSTEM

Rocklath units are nailed to the framing members in the usual way, but are placed so the end joints come between the framing members, NOT on them. The W-22 clip is used to reinforce these end joints.

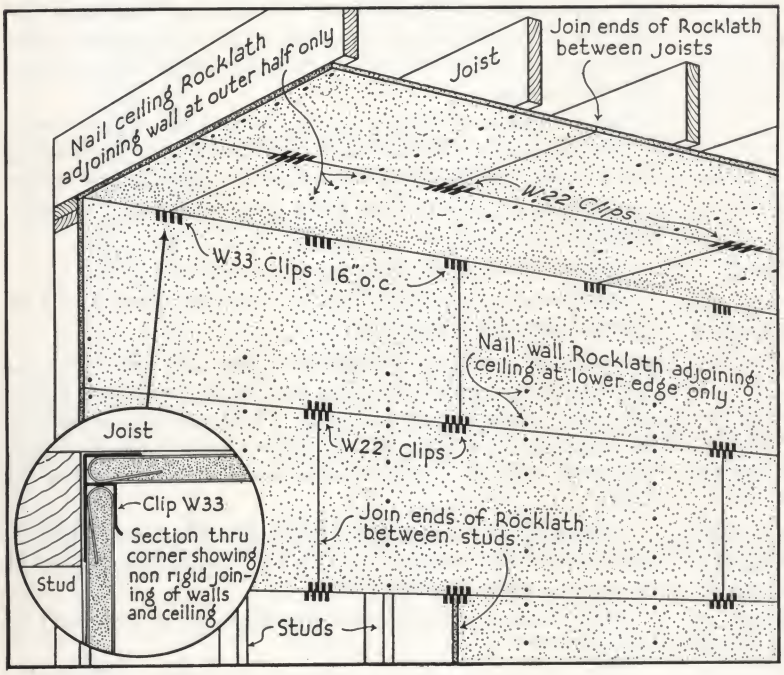
WALLS AND CEILINGS—The Rocklath Units are nailed to the framing members, but so placed that end joints come between the studs. For ease of application, put a W-22 clip onto the lower right-hand corner of each Rocklath unit before setting it in place. This insures proper placing of the clip, and eliminates the chance of omitting it.

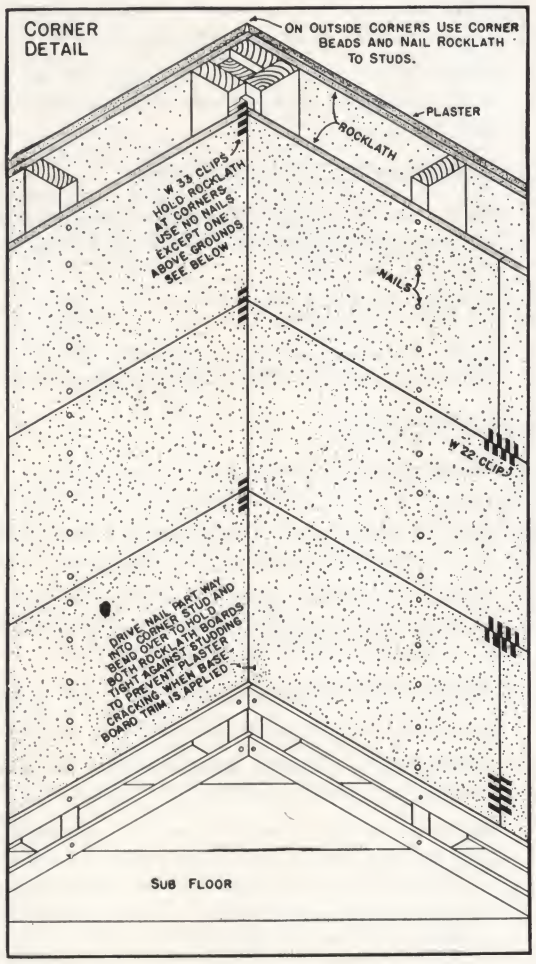
CORNERS—The proper application of the Bridjoint System is shown in the illustrations. To allow free movement of wood framing, Rocklath units forming the ceiling angles should be nailed only from the center of the lath to the edge away from the ceiling angle. W-33 clips are used to tie wall and ceiling lath together. Space these clips on 16-inch centers. Vertical corners are treated in much the same way as the ceiling corners. The W-33 clip is used to hold the ends of the Rocklath and reinforce the corner.

ESTIMATING NUMBER OF CLIPS REQUIRED

W-22—Three clips per square yard.

W-33—Multiply lineal feet of ceiling and corner angles by 0.75.





USG FREFLOTE BRIDJOINT SYSTEM

Similar to the Bridjoint system described above, except that Rocklath is attached to framing members with semi-rigid Freflote Bridjoint clips No. 60, 61, or 62 instead of with nails. Plaster cracking is further minimized because the stress and strain caused by framing movements is partially absorbed by the clips and not entirely transferred to the plaster. Rocklath end joints fall between framing members and are reinforced with W-22 clips. Freflote Bridjoint clips Nos. 60 and 61 used in wood frame construction (No. 61 eliminates "joist marks") and No. 62 used to attach Rocklath to ¾ in. steel channel construction.

USG FREFLOTE PLASTERING SYSTEM

The only difference between this system and the Freflote Bridjoint System described above is that the W-22 clip used to reinforce Rocklath end joints is eliminated. In this system Rocklath is applied so that end joints occur on framing members and the Freflote clips No. 63, No. 64, and No. 65 are large enough to provide end joint reinforcement as well as attachment to the framing members. Clips No. 63 and No. 64 used in wood frame construction (No. 64 clip eliminates "joist marks") and No. 62 clip used in ¾ in. steel channel construction.

NOTE—*The company will furnish on request bulletins giving complete information on these systems. Each system is sold only as a unit, including USG Clips, USG Rocklath, and USG Red Top Plaster.*

For maximum performance in reducing plaster cracking and sound transmission and eliminating plaster discoloration, the RESILIENT ROCKLATH PLASTERING SYSTEM is recommended.

*Registered Trade-Mark

TRUSSTEEL* · STUDS

• • •

A MODERN, FIREPROOF SYSTEM OF PARTITION CONSTRUCTION

EASY TO ERECT—Because of practical design, light weight, and the adjustable feature, Trussteel-Hollow Stud Partitions are easily and quickly erected. One workman can erect the system. The studs are placed in runner tracks which are attached to floor and ceiling. They are secured at proper spacing with wire, looped in holes provided on the flanges. Metal lath attachment is standard practice.

ADJUSTABLE—Trussteel-Studs are adjustable to variance in ceiling heights. The sliding extension permits an upward extension of two inches or a reduction from the stock length of six inches. A ten-foot stud, therefore, is adjustable from nine feet, six inches to ten feet, two inches. This adjustable feature which becomes an integral part of a Trussteel-Stud is a time and labor saver.

RIGID—The unique truss design provides a bracing effect which adds rigidity and strength that enables the partition to resist impacts, vibration, etc. When properly erected and plastered, a Trussteel-Partition should have strength equal to a tile or precast block partition of equal thickness.

EASY TO PLASTER—Because Trussteel-Studs provide a rigid support for the metal lath plaster base, the procedure of plastering in no way differs from a regular metal lath job. The type of lath to be used depends upon the stud spacing.

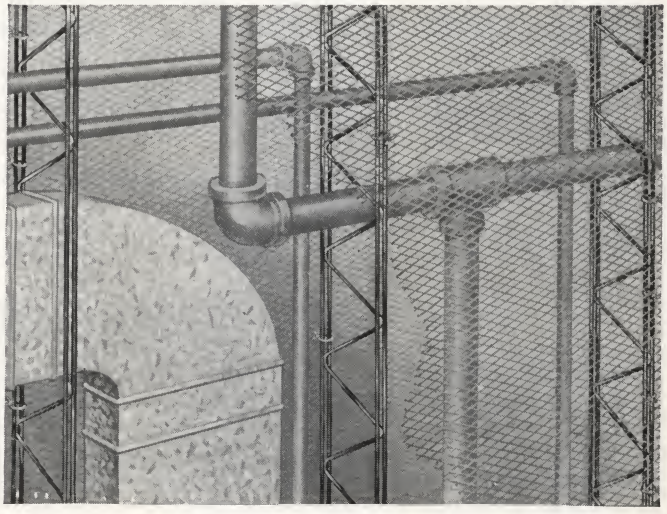
CONCEALS VENTILATING DUCTS, PIPES, ETC.—The fact that Trussteel-Studs provide a hollow partition, ventilating ducts, pipes, conduits, etc. can be concealed by running them through the studs in the ample space provided between the cross supports and the uprights. Since the cross-bracings are twelve inches on center, ventilating ducts can be run horizontally, as well as vertically, through the partition. Two-inch pipes can be run through a 3¼-inch Trussteel-Stud.

STANDARD SIZES—Lengths—From 6 feet 6 inches to 20 feet inclusive, in increments of 6 inches. Lengths of from 14 to 20 feet are supplied in two sections, complete with splicing feature. These are the stock or "fixed" lengths. The adjustable feature on each of these lengths permits adjustment from 6 inches under to 2 inches over the stock length purchased.

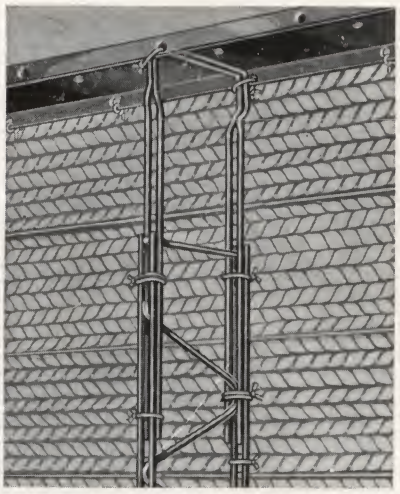
Widths—2, 3, 3¼, 4, and 6 inches. Five popular sizes to meet average requirements. Packed in bundles of convenient size to fit order requirements.

RUNNER TRACKS—Made in eight-foot, two-inch lengths. Packed in bundles of convenient size to fit order requirements.

For further information, write for Catalog ML-41.

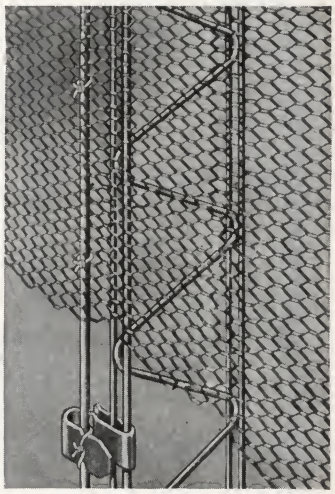


A six-inch Trussteel-Stud Partition allows ample room for concealing 4 in. by 10 in. duct work, both vertical and horizontal runs. In addition, there is unrestricted space for piping.



Extension feature at top of stud permits adjustment to various lengths.

This entire partition was erected by one lather (3¼-in. studs and ⅜-in. lath).



Note clip used with steel studs in resilient system. See page 18.

*Trade-Mark

MASTER SPECIFICATIONS

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INTERIOR LATHING and PLASTERING

• • •

PREFACE

SPECIFICATION FORM—The form of this specification is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously do not apply to every building. In formulating the "Interior Lathing and Plastering Specifications" for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included—such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

LOCAL ORDINANCES—Correlate these specifications with the requirements of Local Ordinances and Trade Customs relating to this division of the work.

ALTERATIONS and ADDITIONS—These specifications cover new work only. For additions and alterations add such clauses covering repairs and replacements and the joining of old and new work as may be required.

ADVISORY SERVICE—The technical staff of the United States Gypsum Company is at all times accessible for advice and recommendations in the formulating of the specification for Interior Lathing and Plastering. Special data, the result of much extended research work, relating to the selection and application of Interior Plastering and "Explanations of Job Conditions which Affect Plastering" will be furnished on request.

NOTES—Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS or PHRASES—Wherever words of phrases occur in the body of the specification paragraph printed in bold face type and enclosed in brackets, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "specify" occurs enclosed in brackets, thus **[specify],** add the particular word or clause applicable, optional with the specification writer.

(A) GENERAL PROVISIONS

NOTE—*For complete plastering systems see USG Resilient and Bridjoint Plastering Systems pages 14 to 19 inclusive.*

NOTE—*For Sabinite Acoustical Plaster, see the* United States Gypsum Company's *complete section including "Sound Control Service."*

(A1) GENERAL CONDITIONS

The general conditions governing the General Contract apply to the work under this division.

NOTE—*The American Institute of Architects' Standard forms of General Conditions is advocated.*

(A2) WORK INCLUDED

(A2a) The work included under this heading shall be the following:

(A2b) All metal suspended or furred ceilings.

(A2c) All metal stud partitions.

(A2d) All metal wall furring.

(A2e) All miscellaneous metal furring.

(A2f) All lathing.

(A2g) All plastering.

(A3) GENERAL SCOPE

NOTE—*List and locate either in schedules on plans or here portions of the building to be finished, the base to receive plaster and here include sufficient data to insure accuracy in estimates.*

(A3a) All plastering, unless otherwise specially noted, shall be three (3) coat work—scratch, brown, and finish coats.

(A3b) The following require no plaster **[list and locate].**

(A3c) The following require but **[one (1)] [two (2)]** coats of plaster **[list and locate].**

(A3d) Ceilings noted as furred **[on plans] [in schedules]** are furred with **[metal] [wood].**

(A3e) All supports for lath are spaced 16 in. on centers.

(A3f) All exterior walls are furred with **[specify].**

(A3g) Exterior walls are not furred. Plaster shall be applied directly on the **[specify].**

(A3h) Partitions are of **[specify].**

(A3i) Walls back of finished tile work shall be lathed only. No plaster shall be applied.

(A3j) Omit all plaster on interior masonry walls and **[hollow tile] [Pyrobar]** partitions back of marble work.

(A3k) All exterior masonry walls, not furred, shall receive one coat of plaster back of marble work.

(A3l) Omit the finish coat of plaster on all stud walls back of **[marble work] [blackboards] [specify].**

(A3m) Omit the finish coat of plaster back of all **[wood wainscots] [specify]** and similar solid trim.

(A3n) **[Specify]** shafts shall be plastered full height.

(A3o) All chases in unfurred masonry walls which are to be plastered shall be lathed with metal lath. Lap the masonry at least 3 in. and secure at masonry joints. Wide chases (over 16 in.) shall be furred to receive lath.

(A4) SCAFFOLDING

(A4a) This contractor shall provide and erect all scaffolding, staging, etc., necessary for the proper execution of his work.

(A4b) He shall co-operate with other trades to the extent that erection of scaffolding shall not conflict with the execution of other work immediately preceding or carried on, without undue conflict, simultaneously with the lathing and plastering.

(A4c) If, after due authority has been granted to erect scaffolding, it is necessary to remove parts thereof for the accommodation of others, demolition and re-erection shall be done only after allocation of cost has been equitably adjusted.

(A5) HEAT and VENTILATION

(A5a) Adequate temporary heat and ventilation will be provided by others for the proper execution of work under this contract.

(A5b) This contractor shall provide salamanders, fuel and attendance and shall maintain without fire hazard adequate heat and ventilation for the proper execution of work under this contract.

(A6) CLOSURES

(A6a) Provide temporary cloth closures for all exterior openings during plastering.

(A6b) During the summer months exterior openings shall be screened to prevent plaster from drying out before it has set.

(A7) PROTECTION

(A7a) Adequately protect from damage and plaster droppings all finish of the building.

(A7b) Adequately protect the building with layers of heavy waterproof paper from damage by water at sources, gauging barrels and mixing boxes.

(A8) DAMAGE

Breakage of glass or other damage to the building or equipment through accident or carelessness incident to work under this contract shall be satisfactorily repaired or made good by replacement at this contractor's expense.

(A9) CLEANING

(A9a) At completion, remove all rubbish, plaster droppings, etc., and leave the building broom clean.

(A9b) This contractor shall remove all plaster from glass and other finish and leave in the condition found.

(A10) CUTTING and PATCHING

After the erection of finish by others, this contractor shall, when called upon, cut out where required, patch and point up all finished plaster work and leave the entire work in perfect condition.

(A11) SAMPLE PANELS

This contractor shall furnish and erect, where directed for the approval of the architect, sample panels of one square yard area each, to illustrate each type of finish required under this contract. The finished work shall equal in all respects the approved panels.

(A12) CONCRETE SURFACES

NOTE—*Concrete surfaces to receive plaster must not be smooth. Use rough form boards. Avoid dressed or oiled boards.*

(A12a) Concrete surfaces must be dry and free from dust, oils and efflorescence.

(A12b) Burn off all oil or grease from surface with a torch.

(A12c) Remove efflorescence with a wire brush and wash with a one (1) to five (5) solution of muriatic acid and water. Thoroughly wash off acid with clean water.

(A12d) Surfaces too smooth to receive plaster shall be thoroughly hacked.

(A12e) Hacking will be done by others.

(A13) GROUNDS

All lathing and plastering shall be laid to not less than the following grounds:

¾ in. for **[¼ in. gypsum lath] [wood lath] [expanded metal lath] [⅞ in. for ⅜ in. gypsum lath]; [1 in. for ½ in. insulating board lath]**; ⅝ in. for **[brick] [or] [clay tile] [½ in. for Pyrobar].**

NOTE—*See pages 15 to 18 inc. for Resilient System Grounds.*

(A14) GUARANTY

(A14a) This contractor shall guarantee all work and materials under this contract for a period of **[specify]** from the date of completion and acceptance.

(A14b) Any defects attributable to faulty workmanship or material furnished under this contract shall be made good at this contractor's expense.

(A14c) This shall include the cost of repairs or replacement of any decorating or other finish damaged by the defects.

(A15) WORKMANSHIP

All work shall be executed by skilled workmen in a manner to satisfactorily fulfill the provisions of these specifications.

(A16) EXAMINATION

(A16a) All construction to receive lathing and plastering is presumed to be substantial, sound, level, plumb and true.

(A16b) This contractor shall examine all construction, supports and base to receive lathing and plastering and shall report to the architect in writing any defects which will deleteriously affect work under this contract.

(A16c) Failure to so report defects for correction or replacement prior to execution of the work under this contract will be construed as acceptance of the construction and shall not relieve the contractor from obligation under his guaranty.

(B) METAL FURRING · METAL STUD PARTITIONS

(B1) MATERIALS

NOTE—*See page 13.*

(B1a) METAL FURRING—[Specify sizes] Red Top Cold Rolled Channels.

(B1b) METAL PARTITION STUDS—[Specify sizes] Red Top Cold Rolled Channels.

(B2) FURRED or SUSPENDED CEILINGS

(B2a) GENERAL—Where so indicated on plans **[or listed in schedules]** ceilings shall be furred or suspended with metal furring members.

(B2b) HANGERS—Hangers shall be placed not to exceed 4 ft. center to center in either direction.

The minimum size for hangers shall be No. 8 galvanized wire, 1 x $\frac{3}{16}$-in. flats or $\frac{7}{32}$-in. round mild steel rods.

Upper ends of hangers of wire, rods, or flats, shall be of sufficent length to wrap around beams or provide a suitable anchorage in the concrete or tile.

Where steel beams or purlins are not more than 4 ft. center to center, hangers may be attached directly to them. When hangers are hung from concrete beams or arches, the hangers shall be placed before concrete is poured.

When ceilings are hung from terra cotta floors, hangers may be installed at tile joints during erection, or may be installed after tile is in place, holes bored clear through tile and secured on upper side by steel rod or toggle bolt.

(B2c) RUNNER CHANNELS—Runner Channels shall be placed not to exceed 4 ft. on centers, and shall be not less than 1½ in. weighing not less than 456 lb. per thousand lineal feet.

Lower end of wire hangers shall be secured to runner channels by three twists; lower end of rod hangers shall be secured to runner channels by two twists, or by wiring; lower end of flat steel hangers shall have holes punched at the proper distance to which the runner channels shall be bolted with not less than ⅜-in. diameter bolts.

Runner channels shall conform to the contour of the ceiling.

(B2d) FURRING CHANNELS—Furring Channels, spaced **[specify]** shall not be less than ¾ in. with a minimum weight of 276 lb. per thousand lineal feet; they shall be erected at right angles to the runner channels and shall be securely saddle tied to them by at least three strands of No. 16 galvanized annealed wire at each crossing, or by No. 9 wire hairpin clips.

NOTE—*Maximum spacing should be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; 12 in. for 2.75 lb.; 16 in. for 3.0 lb.; 19 in. for 3.4 lb. ⅛ in. Flat Rib Lath; 16 in. for 2.5 lb.; 24 in. for 3.0 lb.; 31½ in. for 3.4 lb. or 4.0 lb. ⅜ in. Rib Lath*

(B3) METAL STUD PARTITIONS

(B3a) SOLID PARTITIONS—Metal studs for solid partitions shall be not less than ¾-in. cold or hot rolled channels weighing not less than 276 lb. per thousand lineal feet, and spacing of studs shall conform with the requirements for the weight of lath specified.

(B3b) HOLLOW PARTITIONS—Metal studs for hollow partitions shall be constructed of a double row of ¾-in. channels weighing not less than 276 lb. per thousand lineal feet and spacing of studs shall conform with the requirements for the weight of lath specified.

NOTE—*Also see Trussteel Studs, page 20.*

(B3c) GENERAL—

(B3c1) Studs shall be secured in position by inserting ends in holes punched ¾ in. in top of concrete or other masonry floors or in soffits of masonry ceilings, or by attaching to stud shoes, or by placing ends in holes drilled in wood floor bucks anchored to masonry floors at 4-ft. intervals.

(B3c2) Studs shall be secured on wood floors by wire tying to nails driven 1 in. into floors and projecting at least 1 in. above.

(B3c3) Where metal lath ceilings are used a small hole shall be made in the ceiling lath and the end of the channel allowed to project through it and be wired to a channel attached to the ceiling lath.

(B3c4) Splicing of studs shall be made by lapping channels not less than 8 in. with the flanges interlocked and tied.

(B3c5) Solid partitions over 6 ft. high shall be temporarily braced horizontally on the channel side at intervals not exceeding 6 ft. vertically before applying plaster. Such bracing shall not be removed until scratch coat on the lath side of the partition has set.

(B3c6) In every case one channel shall be set next to wood buck at each side of openings and double wired securely to 8d nails driven on each side of channel in pairs into buck at 2-ft. intervals. Bottom of door buck shall be securely spiked to wood plug in floor, or attached by metal anchors.

(B4) METAL WALL FURRING

Where so indicated on plans **[or listed in schedules]** exterior walls shall be furred with ¾-in. channels spaced **[specify]** on centers with flange to wall. Furring channels shall be substantially secured to floors and ceilings and shall be substantially secured to walls with special hook nails driven into the mortar joints. Provide rigid framing at all openings.

(B5) MISCELLANEOUS METAL FURRING

Provide ¾-in. channel furring for all **[false beams] [ornamental plaster cornices] [stair soffits] [specify]**, etc., as shown on the plans and as detailed. Furring shall be set **[specify]** o.c. and rigidly secured to the building construction.

(C) LATHING

(C1) MATERIALS

(C1a) WOOD LATH—No. 1 **[white pine] [cypress] [spruce]** free from knots, sap and bark.

(C1b) GYPSUM LATH—[Perforated] [Insulating] Rocklath ⅜ in. thick, 16 x 32 in. and 16 x 48 in.

NOTE—*For Rocklath, see pages 7 and 8.*

(C1c) INSULATING LATH—Weatherwood Insulating Lath **[½ in.] [1 in.]** thick, 18 x 48 in.

(C1d) METAL LATH—[Specify brand, material and finish] lath; —— lb. for horizontal positions and —— lb. for vertical positions.

NOTE—*See pages 9, 10 and 11. Select and specify weight for both horizontal and vertical positions.*

NOTE—*Minimum weights should be as follows:*

(a) Expanded Metal Lath—

(a1) ***(For vertical positions, partitions, etc., attached to metal supports)*** *12 and 13½ in. on center, lath shall weigh a minimum of 2.5 and 3.0 lb., respectively except for solid partitions where 2.2 lath may be used on 12 in. spacings and 3.4 lath on 16 in. spacing. For nailed-on partitions, maximum spacing shall be 16 in. for all flat laths, minimum weight to be 2.5 lb.*

(a2) ***(For tied-on ceilings attached to metal supports)*** *maximum spacing shall be 12 and 13½ in. for 3.0 and 3.4 lb. flat lath; for nailed-on ceilings maximum spacing shall be 16 in. for these laths.*

(b) ⅛ in. Flat Rib Lath—

(b1) ***(For nailed or tied-on partitions and furring)***
For supports spaced not to exceed 16 in. o.c. .....2.75 lb
For supports spaced not to exceed 19 in. o.c. .....3.0 lb.

(b2) ***(For nailed or tied-on ceilings)***
For supports spaced not to exceed 12 in. o.c.....2.75 lb.
For supports spaced not to exceed 16 in. o.c.....3.0 lb.
For supports spaced not to exceed 19 in. o.c.....3.4 lb.

(c) ⅜ in. Rib Lath—

(c1) ***(For nailed or tied-on partitions and furring)***
For supports spaced not to exceed 19 in. o.c.....2.5 lb.
For supports spaced not to exceed 24 in. o.c.....3.0 lb.
For supports spaced not to exceed 31½ in. o.c.....3.4 lb.

(c2) ***(For nailed or tied-on ceilings)***
For supports spaced not to exceed 19 in. o.c.....3.0 lb.
For supports spaced not to exceed 24 in. o.c.....3.4 lb.
For supports spaced not to exceed 31½ in. o.c.....4.0 lb.

(C1e) CORNERITE—Red Top Cornerite, 3 x 3 x 96 in. with special selvage edge.

(C2) APPLICATION of WOOD LATH

(C2a) All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [specify]** shall be lathed with wood lath. Lath shall be spaced not less than ¼ in. nor more than ⅜ in. apart and shall be secured to each bearing with standard wood shingle nails, two (2) to each end and one (1) to intermediate bearings.

Lathing shall break joints every eight laths, all put on horizontally. Under no circumstances shall lathing stop and form a long, straight, vertical joint nor be put on vertically to finish out at angles or corners; neither shall any lath run through and behind studding from one room to another. All corners must be made solid before lath is applied.

(C2b) All re-entrant angles shall be reinforced over the wood lath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C3) APPLICATION of ROCKLATH

All **[exterior stud walls] [wood furring] [interior stud partitions] [ceiling joists] [stair soffits] [furred or suspended ceiling] [specify]** shall be lathed with **[Rocklath] [Perforated Rocklath] [Insulating Rocklath].**

(C3a) Cutting shall be done by scoring with a sharp hatchet or knife and then breaking down and up over a straight edge.

Nails shall be 1⅛ in., 13 gauge, blued, 5/16 in. flat head, smooth diamond point.

Rocklath boards shall be applied with the long dimension at right angles to the framing members, butted, with broken joints in each course. Stagger joints between walls and ceilings so that the vertical joints on wall will not meet ceiling joints.

Fit Rocklath tight together at all re-entrant angles and corners. Cut accurately and fit Rocklath neatly around all electric outlet boxes, etc.

Space nails approximately 4 in. apart using 5 nails per stud. First nail ½ in. from edge, nailing to center support first, then outer edges. Each nailing edge must have a firm bearing on studs, joists and furring. Drive nails home.

(C3b) All re-enirant angles shall be reinforced over the Rocklath with Cornerite. Strips shall butt (not lap) at ends and shall be substantially secured.

(C4) APPLICATION of METAL LATH

(C4a) GENERAL—All **[specify location]** shall be lathed with metal lath.

(C4b) ATTACHMENT TO WOOD SUPPORTS—Metal lath shall be attached to wood studs and joists by not less than 4d and 6d nails, respectively, driven to a penetration of not less than ⅞ in. and 1 in., respectively, and spaced not to exceed 6 in. o.c. or by clips or devices with equivalent penetration and holding power. There shall be one tie on side laps, half way between supports.

(C4c) ATTACHMENT TO METAL SUPPORTS—Metal lath shall be wired to metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galvanized soft annealed wire and tie shall always occur where sides of sheets lap at channels. There shall be one tie on side laps half way between channels.

(C4d) ERECTION OF METAL LATH—

(C4d1) Metal lath shall be erected with the long dimensions of sheet across the supports.

(C4d2) Lath shall be first applied to the ceilings and the sheets carried down 6 in. onto the walls and partitions. If metal lath is not used on the ceilings, the lathing shall start at the top of the wall and be bent and carried up 6 in. onto the ceiling joists so that no joints occur at juncture of ceiling and walls; and on walls, all lath shall be started one framing member away from corner and bent into the corner and carried onto the abutting wall so as to avoid a joint at juncture of walls. Where ⅜-in. ribbed lath is used on ceilings or walls it shall be butted into all joints, and strips of flat lath shall be bent into the shape of an "L", 3 in. on each side, and securely wired along each edge in all corners. Strips shall not be fastened at the corner, but only along each edge of the sheet.

(C4d3) Lath shall be placed so that the lower sheet laps over the upper (not vice versa) and shall be securely attached to the supports. Fastenings shall be so placed that they shall occur where sides of sheets lap at supports.

(C4d4) Expanded metal lath shall be lapped at sides not less than ½ in. and at ends not less than 1 in. End laps shall occur only over supports.

(C4d5) Rib lath shall be lapped at sides by nesting outside ribs, and at ends, 1 in.

(D) PLASTERING ACCESSORIES

(D1) MATERIALS

(D1a) METAL PLASTER ARCHES—Red Top Metal Plaster Arches No. **[s] [specify].**

NOTE—*See page 13.*

(D1b) CORNER BEADS—Red Top Corner Bead No. **[specify].**

(D1c) BASE SCREEDS—Red Top Base Screed No. **[specify].**

(D1d) METAL PICTURE MOULD—Red Top Picture Mould No. **[specify].**

(D1e) METAL EXPANSION CASING—Red Top Metal Casing No. **[specify].**

(D2) APPLICATION of METAL PLASTER ARCHES

Secure metal plaster arches in position over the lath, set accurately in accordance with the details. Corner beads on vertical jambs shall join arch beads without break at the juncture.

(D3) APPLICATION of CORNER BEADS

All corners **[both vertical and horizontal]** shall be protected with corner beads for their full height **[or length].**

NOTE—*If there are exceptions, so note.*

Corner beads shall be rigidly and substantially secured, accurately set, plumb, true and straight.

(D4) APPLICATION of METAL BASE SCREEDS

The following rooms shall have base screeds:

NOTE—*List and locate here or in schedules on plans.*

Screeds shall be substantially secured, accurately set, straight and true to line and parallel with the finished floor line.

(D5) APPLICATION of METAL PICTURE MOULDS

The following rooms shall have metal picture moulds:

NOTE—*List and locate here or in schedules on plans.*

Picture moulds shall be substantially secured, accurately set, straight and true to line and parallel with the ceiling line.

(D6) APPLICATION of METAL EXPANSION CASINGS

The following openings shall have metal expansion casings:

NOTE—*List and locate here or in schedules on plans.*

Expansion casings shall be accurately set in line with jambs. Secure with screws, locking clips and stamped casing miters.

United States Gypsum Company

(E) PLASTERING · BASE COATS
(Scratch and Brown Coats—Two Coats)

(E1) MATERIALS and MIXING

NOTE—*See pages 3 and 4.*

NOTE—*Select type best adapted.*

(E1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each mix. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in mixing water.

Do not mix more material than can be applied in one (1) hour nor one mix with another. Never retemper plaster after it has commenced to set.

All material except sand shall be as manufactured by the United States Gypsum Company.

(E1b) WATER—Water shall be clean and free from impurities.

(E1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(E1d) [Specify brand] CEMENT PLASTER (UNSANDED)—

(E1d1) For scratch coat on **[gypsum] [wood] [metal]** lath, mix two (2) parts by weight of dry sand with one (1) part of plaster.

(E1d2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile],** mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d3) For second or brown coat, mix three (3) parts by weight of dry sand with one (1) part of plaster.

(E1d4) Do not mix sand and plaster until ready to add water.

(E1d5) First put in raised end of the mixing box a layer of sand, then one of plaster. Hoe dry from one end of box to other and then back again, working sand and plaster thoroughly together to a uniform color. Put water in the low end of box; hoe plaster into the water, mixing thoroughly.

(E1e) [Specify brand] WOOD FIBER PLASTER—

(E1e1) Use neat for scratch coat on **[gypsum] [wood] [metal]** lath.

(E1e2) For scratch coat on **[brick] [Pyrobar gypsum tile] [clay tile],** use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

(E1e3) For second or brown coat, use **[neat] [or] [with not more than one (1) part of sand to one (1) part of plaster by weight].**

NOTE—*In (E1e2) and (E1e3) above, it is customary to use the "sanded mix". In some territories, due to sand conditions, the "neat" material is advocated. Consult the USG representative for best local practice.*

(E1e4) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water and allow to soak from 10 to 15 minutes. Then mix to proper consistency.

(E1f) [Specify brand] PREPARED PLASTER (SANDED)—

(E1f1) Add nothing to the material but water.

(E1f2) Put the plaster in upper end of mixing box and water in lower end. Hoe plaster into water, mixing thoroughly to the proper consistency for application.

(E1g) BONDCRETE (FOR ALL CONCRETE SURFACES)—

(E1g1) For both scratch and brown coats.

(E1g2) Add nothing to the material but water.

(E1g3) Put the plaster in the upper end of mixing box and water in lower end. Hoe plaster into water. Allow the material to soak from 10 to 15 minutes and mix thoroughly.

(E2) APPLICATION of BASE COATS—GENERAL

Keep plaster from freezing for 24 hours after application.

In hot, dry weather screen all openings while plastering to prevent material from drying out before it has set. If plaster should dry out (showing soft, white spots or areas) sprinkle those portions so affected with clean water from a spray pump or a brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

For grounds see "Grounds," par. (A13), page 22. Unless specially otherwise noted, all plaster shall be applied in three (3) coats—scratch, brown and finish. Scratch coat shall be applied and the surface well scratched. When scratch coat is set and nearly dry, follow with brown coat. Brown coat shall be brought to a true level plane with rod and darby flush with the grounds, ready to receive finish coat. Angles and corners shall be left straight, true and plumb.

(E3) APPLICATION • Cement and Prepared Plasters

(E3a) For best results over all bases, let scratch coat set before applying brown coat.

(E3b) ON WOOD LATH—Soak lath thoroughly the day before and again an hour or so before applying the plaster. Apply in two (2) coats, scratch and brown, the scratch with sufficient pressure to obtain a good key. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3c) ON GYPSUM LATH and FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats, scratch and brown. Scratch coat shall be well scratched in to fill all interstices between lath boards. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3d) ON METAL LATH—Apply in two (2) coats, scratch and brown. Scratch coat shall be applied lightly covering the lath and filling meshes. Scratch first coat and allow to set before applying brown coat. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E3e) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Soak brick or tile wall thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats, scratch and brown, and fill out to grounds. Darby, rod, or broom lightly to a straight and even surface ready to receive the finish coat. Use water sparingly.

(E4) APPLICATION • Wood Fiber Plaster

NOTE—*Neat Wood Fiber Plaster may be troweled down to a smooth finish omitting further finish coat.*

(E4a) ON WOOD LATH—Soak lath. Apply in two (2) coats. Apply scratch coat with sufficient pressure to obtain a good key and scratch the surface. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4b) ON GYPSUM LATH AND FIBER INSULATING LATH—Do not wet lath. Apply in two (2) coats. Scratch coat shall be well scratched in to fill interstices between lath units. Scratch first coat and allow to set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4c) ON METAL LATH—Apply in two (2) coats. Scratch coat shall be applied a little stiff, covering lath and filling meshes. Scratch coat must be set before applying brown coat. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E4d) ON BRICK, PYROBAR GYPSUM TILE, OR CLAY TILE—[Except over dampproof paint.] [Soak brick or tile walls thoroughly.] [If necessary, sprinkle Pyrobar lightly to reduce suction.] Apply in two (2) coats. Before brown coat begins to set, broom or cross-rake surface ready to receive the finish coat.

(E5) APPLICATION • Bondcrete for Concrete

NOTE—*See paragraph (A12), page 22.*

NOTE—*Bondcrete may be troweled down to a smooth finish omitting further finish coat. If desired, so specify.*

(E5a) Apply in two (2) coats in just sufficient thickness to obtain an even surface (not to exceed ⅜ inch on ceilings and ⅝ inch on side walls). Before the plaster begins to set, broom the surface to receive the finish coat.

NOTE—*Use for all large areas of concrete.*

(F) PLASTERING • FINISH COATS

(F1) MATERIALS and MIXING

NOTE—*Select type best adapted.*

(F1a) GENERAL—Store all plaster at the site in a dry place, raised above the bare ground.

Provide clean, water-tight mixing boxes (approximately 3½ x 7 ft. x 10 in. deep for base coats and 2½ x 4½ ft. x 10 in. deep for finish coats) raised 4 in. at one end. Clean mixing boxes after each gauging. Machine mixing is permitted providing machine is kept clean and free from set plaster.

Keep tools clean. Do not rinse tools in gauging water.

Do not mix more material than can be applied in one (1) hour nor one gauging with another. Never retemper plaster after it has commenced to set.

All material except sand for job sanded sand float finish shall be as manufactured by the United States Gypsum Company.

(F1b) WATER—Water shall be clean, free from alkali and impurities.

(F1c) SAND—Sand shall be clean, sharp and free from organic matter with grains graded from fine to coarse, meeting the Standard Specifications for Plastering Sand of the American Society for Testing Materials. Screen through a 6-mesh screen.

(F1d) [Specify brand] PREPARED GYPSUM FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe plaster into water (using approximately one (1) part of water to two (2) parts of plaster measured by volume). Allow the material to soak and draw in the water without hoeing for at least 20 minutes. When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Bring the mix finally to a very thin consistency. Transport in buckets.

(F1e) [Specify brand] FINISHING LIME and [Specify brand] GAUGING PLASTER—

NOTE—*See pages 4 and 5.*

(F1e1) ***(Preparing Hydrated Lime Putty)*** Fill water-tight box one-half to two-thirds full of clean water.

Add dry lime gradually, sifting through a ¼-in. mesh screen, until all water is dried up.

Allow lime to soak overnight to develop full plasticity.

Do not hoe or screen after soaking unless lime is dirty or lumpy.

(F1e2) ***(Preparing Quicklime Putty)*** Add water and lime gradually while mixing, constantly agitating the mixture to prevent burning of the unslaked portion. Mix to a thin consistency and screen. Run into ageing box.

(F1e3) Mix by measure one (1) part of dry gauging plaster with three (3) parts of lime putty, as follows:

For each 12-quart bucket (approximately 37 lb.) of lime putty, add 2 quarts of water in the ring on the board. Sift in enough dry gauging plaster to absorb the water; then blend plaster and lime putty together thoroughly.

NOTE—*The above proportions are equal to 1 part of dry gauging plaster to 2 parts of dry lime hydrate by weight.*

(F1f) [Specify brand] PREPARED GYPSUM SAND FLOAT FINISH—

NOTE—*See page 4.*

Put the finish in the upper end of mixing box and water in lower end. Hoe finish into water.

Allow the material to soak and draw in the water without hoeing for at least 10 minutes.

When the material has soaked and shows no further signs of air bubbles, mix thoroughly and, with particular care, break down the mix to a smooth, even, creamy consistency. Transport in buckets.

(F1g) [Specify brand] SAND FLOAT FINISH (JOB SANDED)—

NOTE—*See page 3.*

Screen sand through a No. 12 screen. Mix dry to a uniform color one (1) part of Cement Plaster to one (1) part of dry sand by weight (equal to from 4 to 6 shovels of sand to each 100-lb. bag). Put dry mix in upper end of box and water in lower end.

Hoe material into water and mix thoroughly to a smooth, creamy consistency. Keep tools and box clean.

(F1h) ORIENTAL INTERIOR (COLORED FLOAT OR TEXTURE FINISH)—

NOTE—*See page 4.*

(F1h1) Color **[s]** shall be **[specify] [as subsequently determined upon].**

(F1h2) Put the Oriental Interior in upper end of box and water in lower end. Hoe material into water, using approximately one (1) part of water to two (2) parts of Oriental Interior, by volume.

Let Oriental Interior soak overnight. After soaking, mix thoroughly and carefully hoe the mix to a smooth, creamy consistency. Transport in buckets.

(F1i) RED TOP KEENE'S CEMENT—

NOTE—*See page 5.*

NOTE—*For preparation of lime putty, see (F1e).*

(F1i1) [Box Mixed for Extremely Hard Trowel Finish]—Use Standard Keene's Cement neat. Add water only. Mix thoroughly and bring to a working consistency. Transport in buckets.

(F1i2) [Box Mixed for Hard Trowel Finish]—Use 25 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i3) [Box Mixed for Medium Hard Trowel Finish]—Use 80 lb. of lime putty to 100 lb. of Standard Keene's Cement. Add water only to the neat Keene's. Mix thoroughly and bring to a working consistency. Blend plaster and putty together thoroughly. Transport in buckets.

(F1i4) [Board Mixed Quick Troweling Keene's]—Use not more than 60 lb. of lime putty to 100 lb. of Quick Troweling Keene's Cement. Place 2 ten-quart pails of lime putty in a ring on the board; add 4½ to 5 gallons of water; sift in 100 lb. of Quick Troweling Keene's Cement; allow to soak 15 minutes; blend plaster and putty together thoroughly. To assist in application over an extremely dry base, fine marble or white silica sand may be added in the proportion of 20 lb. to 100 lb. of Keene's Cement.

(F1i5) [Sand Float Finish]—Mix lime putty, clean sand, and Standard Keene's Cement in the proportions of 100 lb. of lime putty, 400 lb. of sand and 100 lb. of Keene's Cement. **(Add USG Limeproof Colors as subsequently selected.)**

(F2) APPLICATION OF FINISH COAT • GENERAL

Keep plaster from freezing for 24 hours after application.

Do not apply finish coat on a base coat which contains frost.

In hot, dry weather screen all openings while plastering to prevent material drying out before it has set. If plaster should dry out (showing soft, white spots) sprinkle portions so affected with clean water with a spray pump or brush.

After plastering has set, open the windows and permit the wall to dry out as quickly as possible. Use judgment in procedure during freezing weather.

Angles and corners shall be left straight, true and plumb.

(F3) APPLICATION • Trowel Finish

(F3a) LOCATION—The following shall receive trowel finish:

NOTE—*List and locate either in schedules on plans or here.*

(F3b) LIME AND GAUGING PLASTER—Apply in two (2) coats over a fairly dry gypsum plaster base. Scratch in a thin coat, then go over a second time filling imperfections and cat faces. Trowel to a smooth finish applying water with a damp brush. Troweling should be completed before the finish has set. In cold damp weather, provide heat and ventilation until the finish is dry.

(F3c) PREPARED GYPSUM FINISH—Base coat must be dry and roughened before finish is applied. If suction is too great, sprinkle lightly with clean water from a clean brush.

Apply in three (3) coats. The first time over, put on sufficient material to cover the surface completely, using material as thin as possible and grinding it thoroughly into the base coat. Allow this to draw a few moments to avoid blistering.

The second time over, lay the material on perfectly level.

The third time make the material as thin as can be handled on the hawk and fill in cat faces and imperfections. After it has drawn a few moments, trowel to a smooth surface, applying water with a damp brush. Do not drench with water (drenching will kill the face of the material). Work top and bottom of the wall at the same time to avoid joinings.

(F4) APPLICATION • Sand Float Finish

(F4a) LOCATION—The following shall receive sand float finish:

NOTE—*List and locate either in schedules on plans or here.*

(F4b) PREPARED SAND FLOAT FINISH OR CEMENT PLASTER SANDED—Apply sand float finish after base coat has set firm and hard, but while still green.

"Grind in" a thin coat first; then "come back" with the final coat, laying it on in an even surface. Then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work after the material begins to or has set.

Work top and bottom of the wall at the same time to avoid joinings.

(F5) APPLICATION • Oriental Interior (Colored Finish Coat)

(F5a) LOCATION—The following shall receive Oriental Interior Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F5b) GENERAL—Brown coat should be broomed or left rough under darby to insure a good bond. Remove all loose or projecting particles from base coat which may show through finish coat.

Apply over a gypsum plaster base which has set firm and hard. On all types of masonry construction, such as gypsum tile,

clay tile, etc., the plaster base must be thoroughly dry. On lathing bases, such as gypsum, fiber insulating, wood, or metal lath, Oriental Interior may be applied after the plaster base is 90% dry. If the suction in the base coat is too great to permit ease of application, wet down lightly and uniformly with clean water.

To avoid cutting re-entrant angles, use a trowel with edges rounded to a curve the circumference of a dime.

Use as little water as possible while working, so as to avoid killing the surface. Use damp brush only. Do not attempt to work material after it begins to or has set.

Work top and bottom of wall at same time to avoid joinings.

Proper drying conditions must be maintained in order to protect the color. During the late fall, winter and early spring months, the slow-drying periods of the year, artificial heat and proper ventilation must be arranged for. Failure to provide this protection may result in color difficulties.

(F5c) FLOAT FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level and then use a **[cork] [carpet]** or **[felt]** float, working the material to a true, even surface, free from float marks and cat faces.

NOTE—*Cork float preferred.*

(F5d) TEXTURE FINISH—Apply in two (2) coats. First apply a thin coat, grinding this into base, thoroughly covering the surface, and allow to draw a few moments. The second time over, lay the material on perfectly level, working it into the desired texture.

NOTE—*The* United States Gypsum Company *will furnish on application a Special Bulletin covering the execution of textured finishes.*

(F5e) TILE OR MASONRY EFFECTS—Mark off with a straight-edge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6) APPLICATION • Keene's Cement Finish

(F6a) LOCATION—The following shall receive Keene's Cement Finish:

NOTE—*List and locate either in schedules on plans or here.*

(F6b) GENERAL—TROWEL FINISH—Apply in two (2) coats over a dry gypsum plaster base. Scratch in a thin coat well ground into the base; then apply a second coat filling imperfections. Trowel to a smooth finish, applying water with a damp brush. Complete troweling before finish has set.

(F6c) PANELS—Keene's Cement wainscots shall be divided into even vertical panels with V-joints while the material is "green"—preferably from 4 to 5 hours after application. First rake out plaster base at joints for a depth of ¼ and ½ in. wide, laid to a straight-edge, plumb and true—clean of loose particles. Apply Keene's Cement as above and form clean cut, even vertical V-joints at panel divisions.

(F6d) TILE EFFECTS—Mark off with a straightedge while the material is "green"—preferably from 4 to 5 hours after application. Units shall be rectangular and joints shall be clean cut and even.

(F6e) POLISHED SURFACES—After the cement is dry, polish with a cloth to a highly polished surface.

(F6f) SAND FINISH—Apply in two (2) coats over a fairly dry gypsum plaster base, scratching in a thin coat and doubling back with the second coat. Finish to desired texture, using water sparingly.

(G) ORNAMENTAL PLASTER WORK

(G1) LOCATION

The following rooms require ornamental plaster in accordance with details.

NOTE—*List and locate either in schedules on plans or here.*

(G2) MODELS

(G2a) All ornamental work shall be executed from models.

(G2b) Models shall be furnished at the contractor's expense for all ornamental work. These shall be made by a skilled modeler **[selected] [approved]** by the architect, preferably in **[name place]** so that they may be under the direct supervision of the architect while being prepared. Models must be submitted for approval while in the clay.

(G2c) The contractor shall allow the sum of **[specify]** to cover the cost of models prepared under the direction of the architect, delivered f.o.b. cars **[specify].**

(G2d) The owner will furnish, without cost to the contractor, models prepared under the direction of the architect, delivered f.o.b. cars **[specify].**

(G3) MATERIALS and MIXING

NOTE—*See page 6.*

(G3a) [For *Run Work*] [specify brand] GAUGING PLASTER.

Add 50% lime putty to the gauging plaster to give the added plasticity required for run work. Mix thoroughly and bring to a working consistency.

(G3b) [For *Cast Work*] [specify brand] MOULDING PLASTER.

Add water only; mix thoroughly and bring to the proper pouring consistency.

NOTE—*See also Keene's Casting, page 5.*

(G4) APPLICATION • GENERAL

(G4a) All curved work shall be **[run] [or] [cast]** to true radial lines.

(G4b) Leave all ornamental plaster work in perfect condition for decorating, true and smooth, with surfaces and intersections rubbed down with fine sandpaper, if necessary.

(G5) RUN WORK

Furnish clean cut, accurate templates made in strict accordance with the architect's **[full size]** details.

Run all mouldings true with perfect arrises and miters.

(G6) CAST WORK

Ornamental work shall be cast hollow or solid as best suited to conditions, thoroughly strengthened with fiber and braced where necessary.

All cast work shall be set accurately—true, plumb and straight.

If necessary, members shall be substantially fastened around furring; where nails are used, they shall be galvanized.

WALLBOARDS

• • •

SHEETROCK • The Fireproof Wallboard

GENERAL—Sheetrock* is a fireproof wallboard. It is made of gypsum, moulded while in a plastic condition between two sheets of tough protective paper.

USES—Sheetrock is used for walls and ceilings in buildings of all types and takes all types of painting and decorating, including wall paper.

TYPES and SIZES—Sheetrock is made ¼-inch, ⅜-inch, and ½-inch thick; 32 and 48 in. wide and 4, 5, 6, 7, 8, 9, 10, 11 and 12 feet long. Sheetrock ⅜-inch and ½-inch thick is available with recessed edge.

BUNDLING—The Sheetrock Zipcord package protects and identifies the product.

ADVANTAGES—Sheetrock is fireproof, permanent, does not expand or contract, is easy to install and nails like lumber.

SHEETROCK PERF-A-TAPE* JOINT SYSTEM—Designed for use especially with Recessed Edge Sheetrock, this patented joint system makes possible the smoothest and strongest type of wallboard joint—a joint that is easy to make and is unusually low in cost. It consists of a specially fabricated, beveled, and perforated fiber tape $2\frac{3}{16}$ inches wide, and special cement. It comes conveniently packed in a box containing a 250-foot roll of Perf-A-Tape and a bag of cement sufficient to treat the joints on 500 to 650 square feet of Sheetrock surface. Available also in 25-foot package for smaller jobs. Complete application directions come with each package. Actual use on thousands of jobs has proved that Perf-A-Tape Joint System makes smooth, even, permanently invisible Sheetrock joints quickly and economically—joints stronger than Sheetrock itself.

OTHER SHEETROCK JOINT TREATMENTS—Metal "A"* Joint System, Sheetrock Reinforced Joint System, Sheetrock Finisher. Information on request.

DECORATING SHEETROCK—Sheetrock can be painted, calcimined, wallpapered, enameled or covered with linoleum, lining cloth or paper, either with or without panels. It can also be decorated with Textone* Plastic Paint or Texolite.* Always conceal joints and nailheads by means of a Sheetrock Joint Treatment or with Sheetrock Finisher, and size the surface including nailheads and joints with a good grade of varnish size or USG K-Cemo Primer.

Wallpaper—Before hanging wallpaper or wall fabric, always apply a VARNISH SIZE to facilitate their removal when redecorating.

Calcimine—Before calcimining apply a varnish size, following same method or first brushing joints and nailheads as for painting.

WOOD GRAINED SHEETROCK

DESCRIPTION—Wood Grained Sheetrock now makes it possible to have beauty of wood paneled interiors at wallboard costs. The face surface so closely resembles wood that it is not easily distinguishable from wood itself.

FINISHES—Four finishes — Matched Walnut, Plain Walnut, Knotty Pine, Douglas Fir—provide a selection of either light or dark woods.

SIZES—All boards 4 feet wide and ⅜ inches thick. Matched Walnut in lengths 8 and 9 feet only. Other finishes 6, 7, 8, 9, or 10 feet long.

EASY TO ERECT—Boards are nailed in place and joints covered with decorative mouldings. For intermediate nailing use 4d finishing nails driven at 45° angle. Nailheads may be concealed with Plastic Wood, stick shellac or linseed oil putty mixed with stain to match surface.

FINISH—Wood Grained Sheetrock is manufactured with two coats of lacquer on surface to provide a washable surface. IF FURTHER FINISH IS DESIRED (WAX or VARNISH) IT IS ABSOLUTELY NECESSARY TO FIRST APPLY A COAT OF WHITE SHELLAC.

INSULATING SHEETROCK

Insulating Sheetrock* is Sheetrock upon the back of which is mounted a thin, smooth, bright sheet of aluminum. It is applied and finished as specified for Sheetrock, with the bright aluminum side always next to the framing members facing the dead air space between them. Thus installed, its heat insulating value is equal to or better than that of standard ½-inch thick Fiber Insulating Board. For complete data see USG "Thermal Insulation" section.

SHEETROCK TILE BOARD*

DESCRIPTION—Sheetrock Tile Board is a fireproof, gypsum wallboard made to obtain conveniently and at low cost, beautiful tiled-wall effects. It is a perfected product that makes possible lacquered and enameled surfaces that resemble the best ceramic tile in any shade of color desired, thus enabling the decorator to obtain complete color harmony.

SIZES—Sheetrock Tile Board is made in panels ⅜-inch thick, 48 in. wide and 6, 7, 8, 9, and 10 feet long. The tile impressions are 4¼x4¼ inches, a standard size for built-in fixtures.

ERECTION and DECORATING—Complete directions for erection and decorating of Sheetrock Tile Board are on the back of each panel.

*Trade-Marks

Master Specifications

APPLICATION OF SHEETROCK

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE—*Words or clauses within brackets in bold face type are selective. Select and include only those clauses which apply to the particular work.*

NOTE—*Perf-A-Tape Joint System must be specified if Sheetrock is applied at right angles to framing members to give the necessary strength needed in the absence of headers.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sheetrock.*

(2) FRAMING

(2a) All framing members shall be spaced accurately 16 in. on centers and shall be set straight and true. Bowed or warped framing members shall be replaced or straightened.

(2b) Headers (2 in. x 4 in.) shall be provided wherever necessary so that all four Sheetrock edges can be solidly nailed (see note below).

NOTE—***If Perf-A-Tape Reinforced Joint System is used,*** *⅜ in. or ½ in. Recessed Edge Sheetrock may be applied horizontally (long Sheetrock edges at right angles to framing members). If horizontal application is specified, paragraph (2b) specifying headers can be eliminated.*

Quarter Inch Sheetrock should always be applied vertically (long edges parallel to framing members) and headers should always be provided for as under paragraph (2b) above.

(3) MATERIALS

(3a) **WALLBOARD**—Sheetrock as manufactured by the United States Gypsum Company shall be **(¼ in. thick) (⅜ in. thick—Recessed Edge) (½ in. thick—Recessed Edge)** bundled. Lengths shall be full height from floor to ceiling on walls and shall be such as will make possible a minimum number of end joints on ceiling.

NOTE—*If Perf-A-Tape Joint System is specified with ⅜ in. or ½ in. Recessed Edge Sheetrock, the Sheetrock may be applied horizontally as explained under "NOTE" above. If so specified, change (3a) to read "Lengths shall be such as will make possible a minimum number of end joints on both walls and ceilings.*

(3b) **NAILS**—Nails shall be **(4d for ¼ in. and ⅜ in. thick Sheetrock) (5d for ½ in. thick Sheetrock)** flat headed cement coated nails.

(3c) JOINT TREATMENT

(3c1) Perf-A-Tape Joint System (For use exclusively with Sheetrock).

(3c2) Metal A Joint System (For use exclusively with Sheetrock).

(3c3) Sheetrock Finisher (Cement only—no reinforcing tape).

(4) PREPARATION OF SHEETROCK

(4a) **PILING**—Sheetrock bundles shall be piled flat on the floor in center of room after doors and windows are in place on job. Edges shall be protected.

(4b) **HANDLING**—Sheetrock shall always be handled in a vertical position on its long edge.

(4c) **CUTTING OR SAWING**—To cut the board the face paper shall be scored with a knife or chisel and the board snapped in two over a straight-edge or the board shall be sawed through with a sharp hand saw with face or board up.

Before nailing board in place all cut edges and mill cut ends shall be beveled on the face side with coarse sandpaper removing any loose ragged paper at same time.

(5) APPLYING SHEETROCK

(5a) **GENERAL**—All ends and edges shall be perfect. All exposed ends shall be face beveled. All board shall butt snugly along the covered edges and shall be left open ⅛ in. at all abutting cut ends. Edges or ends shall not be forced together. All joints shall be broken—that is, stagger boards so that the corners of any four boards do not meet at one point. On opposite sides of partitions, perpendicular joints shall not occur on the same stud.

(5a1) Quarter Inch Sheetrock shall be applied with the length parallel with framing members.

(5a2) **(⅜ in.) (½ in.)** Recessed Edge Sheetrock shall be applied **(parallel with) (at right angles to)** framing members.

(5b) **CEILINGS AND WALLS**—Ceilings shall be erected first. Walls shall be erected so that boards fit snugly against ceiling boards and first board shall be squared with adjacent wall.

(5c) **NAILING**—Nails shall be driven "home," straight in, with heads slightly below surface without using nail set. Boards shall be nailed first at edge adjoining board last applied; then on first intermediate framing member; then on second intermediate framing member; and finally remaining side and ends. Nails shall not be staggered on adjoining edges.

NOTE—*For spacing nails use clause (5c1) below when Sheetrock is applied parallel to framing members and clause (5c2) when applied at right angles to framing members.*

(5c1) On intermediate supports nails shall be spaced 6 in. apart on ceilings and 9 in. apart on walls. At all edges and ends nails shall be spaced 3 in. apart ⅜ in. from the edge.

(5c2) All nails shall be spaced 4 in. apart on all framing members.

(6) APPLYING JOINT TREATMENTS

(Perf-A-Tape Joint System) (Metal A Joint System) shall be applied and all intermediate nail heads spotted according to United States Gypsum Company's specifications which are included in every box of joint system.

United States U.S. Gypsum Company

GYPLAP

Fireproof Sheathing

DESCRIPTION—Gyplap* is a fireproof solid sheet of gypsum encased in a tough, fibrous, water-resisting covering. The ends are coated to resist moisture. It is an ideal material for sheathing on frame structures under siding, shingles, stucco, and brick veneer. Gyplap Sheathing has tongue and groove edges on the long dimension to provide positive assurance of a tight fit at the unsupported joints. Gyplap Sheathing does not open up at joints with moisture and temperature changes. It is applied with its length at right angles to the studs.

INSULATING GYPLAP—Insulating Gyplap is Gyplap, upon the back of which is mounted a thin, smooth, bright sheet of aluminum. Insulating Gyplap is applied to the exterior face of exterior walls with the bright aluminum side next the framing members. Thus installed, its heat insulating value is equal to or better than that of standard ½ in. thick Fiber Insulating Board.

SIZES—Gyplap is ½ in. thick, 24 in. wide, 6 ft. 8 in. and 8 ft. long to fit supports 16 in. on centers.

ADVANTAGES—

Fireproof—Does not burn or readily transmit heat. It interposes a substantially thick fireproof sheet over the wood frame.

Permanent—Does not disintegrate.

Moistureproof—The outer surface is specially treated to resist moisture. No building paper is required. The ends are coated to resist moisture.

Windproof—The continuous surface with wind-tight horizontal joints (the end joints occur only over supports) prevents air leakage.

Economy and Convenience—The sizes of Gyplap are convenient and economical to erect. It cuts and nails as easily as lumber, adapting it to any building condition. Every sheet of Gyplap is true and uniform—no knots or waste material.

Strength—The large units of Gyplap span across seven studs spaced 16 in. on centers and thoroughly brace the framework.

STRENGTH AND RIGIDITY TESTS—Strength tests of Gyplap and of ⅞-in. thick wood sheathing applied both horizontally and diagonally, conducted by Columbia University in New York City, and Armour Institute of Technology in Chicago, are ample proof of the strength and rigidity of gypsum sheathing, and its suitability for all purposes for which wood sheathing has usually been employed.

Master Specifications

GYPLAP—FIREPROOF SHEATHING

NOTE—*Siding, stucco and brick veneer may be applied over Gyplap or Insulating Gyplap in the usual manner.*

(1) SHEATHING

Sheathing shall be **[Gyplap] [Insulating Gyplap]** as made by the United States Gypsum Company, ½ in. thick, 24 in. wide, 6 ft. 8 in. or 8 ft. long. Nails for application shall be 1¾ in. long, No. 10½ gauge, galvanized flat head roofing nails.

(2) APPLICATION

Apply **[Gyplap] [Insulating Gyplap]** with groove side down and **[trade-mark] [aluminum foil]** side in, directly to framework with length at right angle to supports.

Butt the ends tightly over a support and interlock the side edges. Stagger vertical joints.

Fit tightly around all openings.

Fasten securely with nails spaced 4 in. apart on each bearing, set ⅜ in. from end edges.

Do not cover Gyplap with building paper.

(3) SIDING

Apply siding at right angles to studding directly over Gyplap. Nail only to studs with nails sufficiently long to pass through the Gyplap.

(4) STUCCO

Apply 3.4 lb. Red Top Self-Furring Diamond Mesh Lath **[Galvanized] [Copper Bearing Steel, Painted] [Pure Iron, Painted]** at right angles to the studs. Lap lath ½ inch on sides and 1 inch on ends. Carry metal around all corners to first support. Secure with 6d galvanized nails approximately 6 inches apart on centers driven through the Gyplap into the studs. Drive nails well in and bend to engage at least two lath strands. Thoroughly secure metal at all openings.

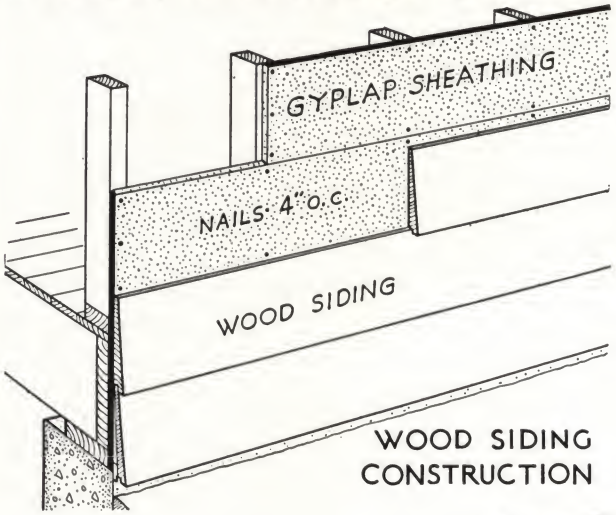
NOTE—*Follow standard specification for the application of exterior stucco.*

(5) SHINGLING

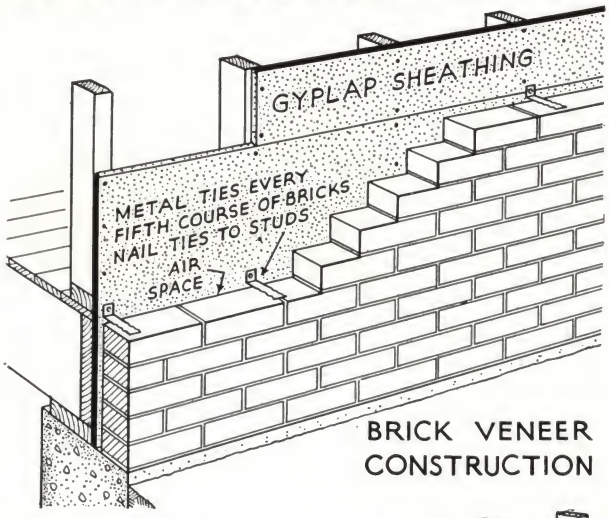
Over the Gyplap apply, secured through the Gyplap to each bearing, 1 x 2-in. furring strips to take shingle weathering specified.

*Trade-Mark

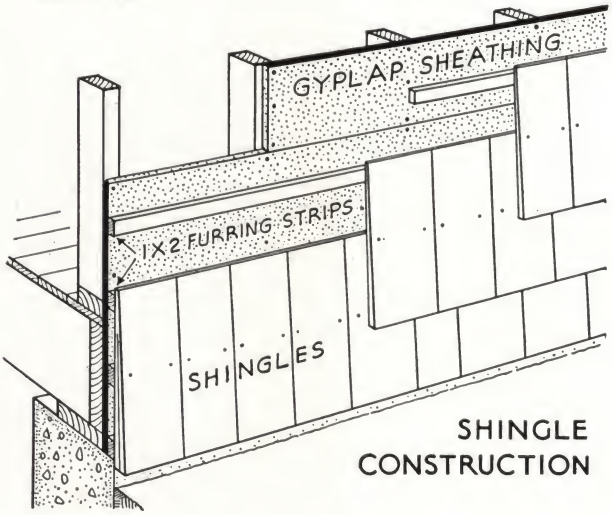
GYPLAP FIREPROOF SHEATHING CONSTRUCTION DETAILS



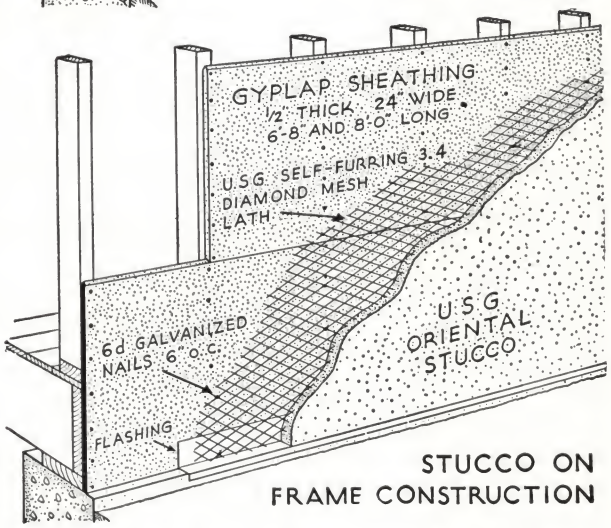
WOOD SIDING CONSTRUCTION



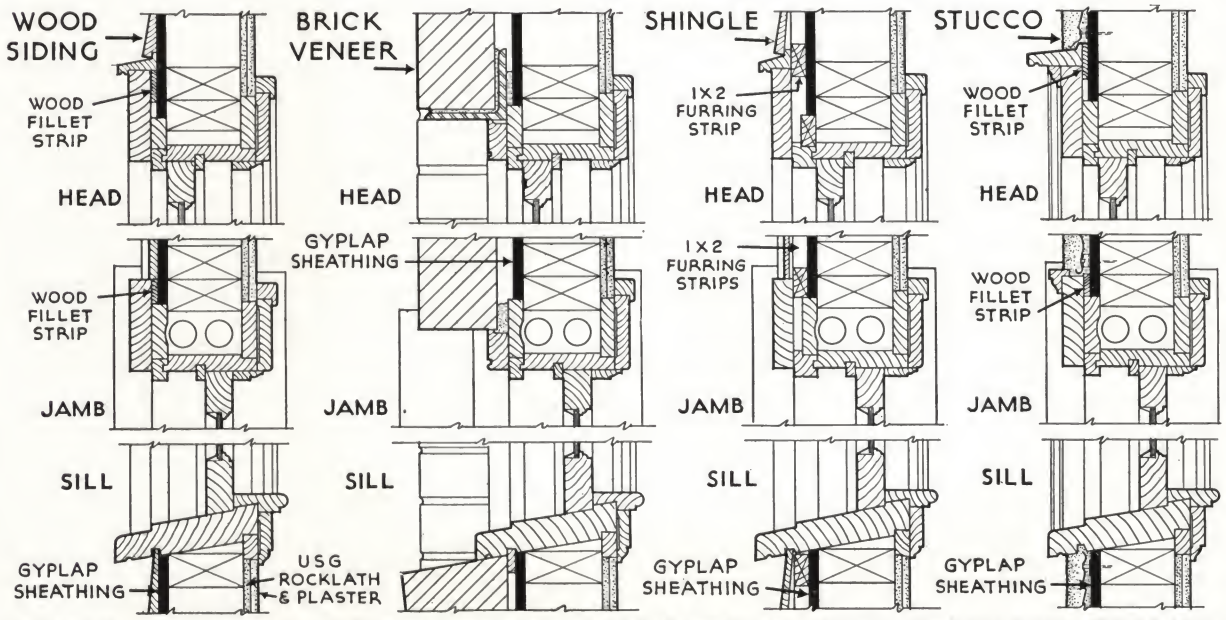
BRICK VENEER CONSTRUCTION



SHINGLE CONSTRUCTION



STUCCO ON FRAME CONSTRUCTION



TYPICAL WINDOW DETAILS - GYPLAP SHEATHING WITH STANDARD FRAMES

UNITED STATES GYPSUM COMPANY

300 West Adams Street

Chicago, Illinois

• • •

Sales Offices

Atlanta, Ga. . . . . 1440 Citizens and Southern Bank Bldg.
Baltimore, Md. . . . . 1400 Standard Oil Bldg.
Birmingham, Ala. . . . . 1203 Comer Bldg.
Boston, Mass. . . . 731 Statler Office Bldg., 20 Providence St.
Buffalo, N. Y. . . . . 514 Brisbane Bldg.
Cincinnati, Ohio . . . . . 3012 Carew Tower
Cleveland, Ohio . . . . . 627-629 Hanna Bldg.
Dallas, Tex. . . . . 1302 Santa Fe Bldg.
Denver, Colo. . . . . 514 18th St.
Detroit, Mich. . . . . 10090 West Jefferson St.
Houston, Tex. . . . . 4616 Main St.
Indianapolis, Ind. . . . . 815 Architects' and Builders' Bldg.
Kansas City, Mo. . . . . 438 Ward Parkway
Los Angeles, Calif. . 507 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis. . . . . (At Mill) 439 W. Oregon St.
Minneapolis, Minn. . . . . 1308 Foshay Tower
New York, N. Y. . . . . 30 Rockefeller Plaza
Omaha, Neb. . . . . 921 Woodmen of the World Bldg.
Philadelphia, Pa. . . . . 1616 Walnut St.
Pittsburgh, Pa. . . . . 712 Grant Bldg.
Portland, Ore. . . . . 302 Spalding Bldg.
St. Louis, Mo. . . . . 1047 Big Ben Blvd.
San Francisco, Calif. . . . . 2501 Harrison St.
Washington, D. C. . Investment Bldg., 15th and K Sts., N. W.

Samson Plaster Board Company
Sales Agents for United States Gypsum Company
Crosby Building, Buffalo, N. Y.

WICKWIRE SPENCER STEEL COMPANY

GENERAL OFFICES
41 East 42nd Street, NEW YORK, N. Y.

OFFICES AND WAREHOUSES

WORCESTER, MASS., 80 Webster Street
CHICAGO, ILL., 221 No. La Salle Street
LOS ANGELES, CAL., 214 No. Alameda Street
BUFFALO, N. Y., 70 Niagara Street
SAN FRANCISCO, CAL., 101 Townsend Street
PORTLAND, ORE., 1127 Northwest 16th Ave.

Product

CLINTON WIRE LATH.

For our pages on Electrically Welded Wire Fabric for concrete reinforcement, Chain Link and Iron Fences and Gates, Metal Grilles and Radiator Enclosures, see File Index.

CLINTON WIRE LATH

Clinton wire lath has been a recognized standard of quality for over half a century and is one of the most efficient and trustworthy lathing materials in use at the present time.

Clinton Wire Cloth Company (Wickwire Spencer Company, successor), originator of wire cloth weaving, was the first concern to engage in the manufacture of fireproof lath.

Soon after the invention of power looms for the weaving of woolens and cotton, the Clinton Wire Cloth Company perfected a form of loom for weaving wire and entered into the manufacture of their wire lath. This woven wire mesh was the first efficient form of metal fireproofing ever used. It was used for fireproofing purposes as early as 1856, and many buildings are now standing which were fireproofed with this material at that time.

Wire Lath Has Great Strength—A drawn steel wire is, in the matter of strength and general quality of material, a superior product.

The wire, which is made by being drawn through a die, is, during its manufacture, subjected to a high tensile stress. This drawing and working of the material renders the wire a fibrous material of uniform quality, strong and reliable.

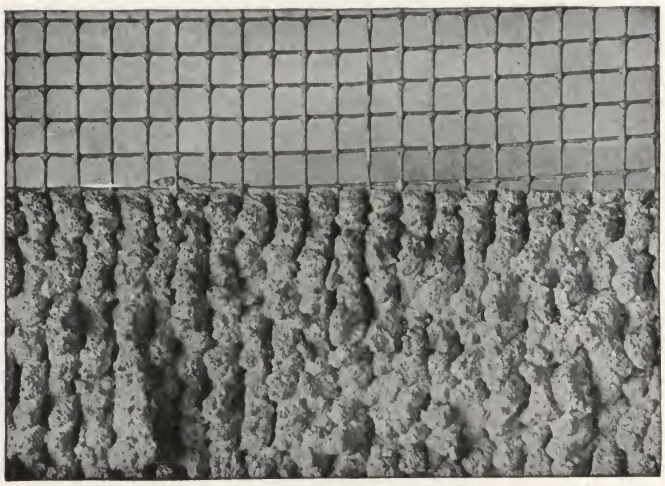
Perfect Key—The primary function of any lathing material is to serve as a foundation to grip and hold mortar. It is the key or the clinch of the backplaster which actually determines the efficiency of the plastered surface.

V-stiffeners—In cases where special rigidity is desired or where furring strips are widely separated, Clinton lath may be provided with V-stiffeners. These are rigid V-shaped ribs of No. 24 gauge steel securely fastened to the wires and extending across the fabric at intervals of 8 in.

In addition to giving additional stiffness, these V-stiffeners also afford an offset of ⅜ in. from the supports to which the lath is attached.

Stock Grades and Sizes of Clinton Wire Lath

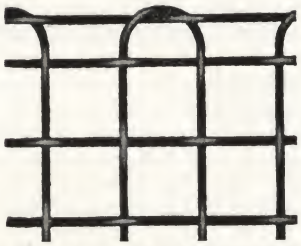
Mesh and Gauge—All stock grades of Clinton wire lath are woven from No. 18 to No. 21 Washburn & Moen gauge wire with 2 and 2½ meshes per lineal inch in each direction.



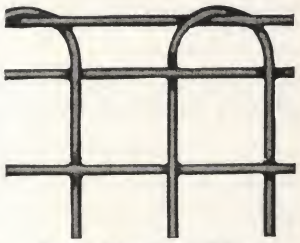
Key of Clinton Wire Lath

New York Telephone Building, Barclay and Vesey Streets, New York, N. Y.

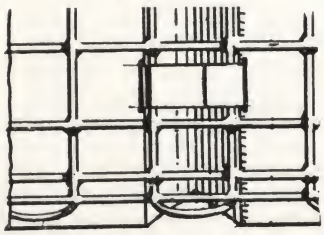
MCKENZIE, VOORHEES & GMELIN, Architects
WILLIAMSON & ADAMS, Lathing Contractors



Plain Japanned or Galvanized Wire Lath
2½x2½ mesh



Plain Galvanized Wire Lath
2x2 mesh



Stiffened Galvanized Wire Lath
2½x2½ mesh

Japanned Lath—All sizes of Clinton lath, either plain or stiffened, may be obtained either japanned or galvanized.

Galvanized-after-woven Lath—Clinton lath, either plain or stiffened, is galvanized after weaving.

Size of Rolls—Clinton plain V-stiffened lath, either japanned or galvanized-after-woven, is furnished in rolls 150 ft. long x 36 in. wide.

SHIPPING WEIGHTS AND DIMENSIONS ONE ROLL CLINTON WIRE LATH*

Mesh §	Gauge	Plain Lath				Stiffened Lath			
		Painted		Galvanized		Painted		Galvanized	
		Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.	Wgt., lb.	Dia., in.
2	18	120	13	163	14	170	19	223	21
2	19	91	13	128	13	142	18	188	20
2	20	68	12	100	12	116	16	160	20
2½	18	147	13	203	14	203	19	263	21
2½	19	114	13	160	14	165	18	220	20
2½	20	85	13	126	13	135	16	186	20
2½	21	70	13	110	13	120	15	170	19
2½	22			90	13				

*All lath 36 in. wide; i.e., height of all rolls 36 in.
§Meshes per lineal inch in each direction.

Specifications for Interior Furring and Lathing

Furnished upon request.

THE CALVIN TOMKINS CO.

Permanent Building Materials
50 Church Street, NEW YORK, N. Y.

KELLEY CORK-GYPSUM WALLBOARD AND SHEATHING

Distinctive Building Products

KELLEY CORK-GYPSUM WALLBOARD

Thirty years of manufacturing experience and progressive research make Kelley Cork-Gypsum Wallboard a product acceptable everywhere. This improved wallboard is now available to contractors, owners and architects.

Why Cork — The use of cork is an exclusive feature of Kelley Cork-Gypsum Wallboard. Careful research determined the disadvantage of brittle board with fragile edges could be overcome by introducing resilient, light weight, moisture-resisting cork. Its use in combination with gypsum and rigid control in the manufacturing process has produced a wallboard of superior quality.

Section of Square and Recessed Edge Wallboard

Cellular Structure—A further improvement resulting from the introduction of cellular structure in the cork-gypsum mixture has made Kelley Cork-Gypsum Wallboard a distinctive building product. In addition to these two outstanding improvements Kelley Cork-Gypsum Wallboard is strengthened by carefully selected tough, manila paper that covers the face and edges of the board.

We guarantee that Kelley Cork-Gypsum Wallboard complies with all requirements of Federal Specification SSW-51A for gypsum wallboard and with A.S.T.M. Standard Specification C-36 for gypsum wallboard.

SOME OUTSTANDING FEATURES OF KELLEY CORK-GYPSUM WALLBOARD

(1) The only gypsum wallboard containing cork. (2) The only gypsum wallboard combining cork and cellular structure. (3) Folded edges. (4) Light in weight. (5) Fireproof. (6) Square or recessed edges. (7) Grips the nail. (8) Easily handled. (9) Easily sawed. (10) Easily decorated. (11) Flexible. (12) Insulating. (13) Non-warping. (14) Moisture-resisting. (15) Costs no more.

Thicknesses, in.	Widths, in.	Lengths, ft.	Edges
¼	32 and 48	4, 5, 6, 7, 8, 9, 10	Square Square or Recessed T & G
⅜	32 and 48	4, 5, 6, 7, 8,	
½	32 and 48	9, 10, 11, 12.	
½	32 and 48	8, 9, and 10	

Kelley Cork-Gypsum Wallboard is also supplied in any of the above sizes with aluminum foil backing.

SHORT FORM SPECIFICATION

Where wallboard is called for in the specifications, shown on the plans or indicated in the schedule of room finishes, it shall be Kelley Cork-Gypsum Wallboard, ¼, ⅜ or ½ in. thick, made to conform to Federal and A.S.T.M. specifications and installed in accordance with standard specifications.

KELLEY CORK-GYPSUM SHEATHING

A strong, sturdy fireproof sheathing board embodying the distinctive cork and gypsum core between two sheets of heavy waterproof paper and finished with tongue and grooved edges.

ADVANTAGES

Fireproof, water resistant, insulating, windproof, adds structural strength, non-warping, eliminates building paper, saws and handles easily, verminproof, costs less.

Thickness, In.	Width, In.	Length, In.	Edges.
½	24	80 and 96	T & G Ends Square

Can be furnished with aluminum foil backing for a high degree of insulation.

USES

Sheathing and roof boards; under wood siding; under shingle finish; under stucco finish; and under brick veneer finish.

APPLICATION

Kelley Cork-Gypsum Sheathing shall be applied at right angles to framing members with groove edges down, trade mark in, joints staggered, and ends butted together. Nails shall be 10½-gauge galvanized flat head roofing nails 1¾ in. long—4 in. apart on all supports and ⅜ in. in from edges.

KELLEY WALLBOARD REINFORCED JOINT SYSTEM

Kelley Wallboard Reinforced Joint System is packed in cartons containing 17 lbs. of high binding, low shrinking, special cement and 250 ft. of 2-in. special fiber tape. This is sufficient to treat joints and spot nailheads on 500 to 650 sq. ft. of board surface. A direction sheet of detailed instructions is included in every package.

KELLEY JOINT FILLER

Kelley Joint Filler may also be used for finishing joints in a quick and inexpensive way without the use of a reinforcing tape. It is packed in convenient 5-lb. packages, requires only water for mixing, and is applied with a semi-flexible knife.

DRY-WALL CONSTRUCTION

There has been a decided trend in the past few years toward dry-wall construction, especially in home building. Use of the ½-in. gypsum wallboard with recessed edges has been growing. This produces a solid and fireproof wall or ceiling — is easily decorated, low in initial cost and speeds the completion of the home. Kelley Cork-Gypsum Wallboard meets all the rigid requirements demanded of board in this type of construction.

KELLEY MONUMENT COLORED STUCCO

A factory mixed, non-fading colored stucco finish of white portland cement and hydrated lime formulated with other ingredients for use over a cement base coat. Complete specifications, color charts and samples will be furnished upon request. Packed in 100-lb. paper bags. Mixed with water only on the job. Applied ⅛ to ¼ in. thick, covers 125 to 200 yds. to the ton. Eleven standard colors and white.

FASTITE

A highly successful liquid compound for use in concrete as an integral waterproofer, dampproofer, hardener, accelerator and anti-freeze. Complete specifications for its use will be furnished upon request. Packed in 1 and 5-gal. cans, 30 and 55-gal. drums.

KELLEY MONUMENT INTERIOR COLORED FINISH

A factory mixed, highly plastic, non-fading interior colored finish of Keene's cement and lime for use over gypsum or lime base coats for interior use only. Packed in 100-lb. paper bags. Applied ⅛ to ¼ in. will cover 200 to 300 yds. to the ton. Furnished in eleven standard colors and white.

THE NEW YORK WORLD'S FAIR

Gypsum board successfully demonstrated its value at the Chicago Century of Progress Exposition. Millions of feet of gypsum board are being used on both the inside and outside of buildings at the New York World's Fair. Kelley Cork-Gypsum Wallboard and Kelley Cork-Gypsum Sheathing have met all the requirements of the World's Fair Building Code and thousands of feet are being used in World's Fair structures.

KELLEY CORK-GYPSUM LATH

Kelley Cork-Gypsum Standard Lath

Made with the same distinctive core of cork and gypsum used in Kelley Cork-Gypsum Wallboard. The lath is surfaced with a tough fiber sheet that provides an excellent bond for plaster. The long sides have rounded closed edges and the ends are cut square.

Sizes — 16x32x⅜ in. thick — 6 pieces—21⅓ sq. ft. bundled.

16x48x⅜ in. thick—6 pieces—32 sq. ft. bundled.

Section of Kelley Cork-Gypsum Lath

Sizes — 16x32x⅜ in. thick — 6 pieces—21⅓ sq. ft. bundled.

16x48x⅜ in. thick—6 pieces—32 sq. ft. bundled.

Advantages

Fireproof, easily applied, light in weight, saves plaster, hastens drying, braces framing, permanent plaster bond, no shrinking or warping, perforated lath passes one-hour fire test, eliminates moisture.

It is also manufactured in ¼ and ½-in. thicknesses, and in sizes 32 x 36 and 32 x 48-in.

Standard lath in the 16x32 and 16x48 in. sizes is also furnished covered with aluminum foil.

Kelley Cork-Gypsum Perforated Lath

Identical in structure to standard lath, except that the lath is perforated at regular intervals throughout the surface of the lath. These perforations provide additional mechanical keys for the plaster and increase resistance to fire.

Tests at the U. S. Bureau of Standards have demonstrated that Perforated Lath applied and plastered in the approved manner had sufficient fire resisting qualities to stand up for one hour.

APPLICATION

(1) All walls, ceilings and partitions as specified shall be Kelley Cork-Gypsum Lath.
(2) Cutting of lath should be done by scoring with a hatchet or knife and then breaking over a straight edge.
(3) Nails should be standard blued lathing nails 1⅛ in. x 13-gauge ⅜ in. head spaced 4 in. apart. Nail center supports first, then edges.
(4) Break joints.
(5) Do not wet lath before plastering.

We guarantee that Kelly Cork-Gypsum Lath, plain or perforated, complies with all the requirements of Federal and A.S.T.M. Specifications.

OLD NEWARK ACOUSTICAL PLASTER

Old Newark Acoustical Plaster is a specially formulated finishing plaster designed for the correction of acoustical faults in rooms where good hearing conditions are essential and desirable, and for the reduction of noise in rooms where quiet is beneficial and necessary.

Appearance—Old Newark Acoustical Plaster's final appearance is subject to the type of finish desired. It can be finished either with a trowel or a float. A trowel finish will give a smooth stone like appearance, while a float will give a fine sand finish appearance.

Color—The natural color is an attractive warm gray, just off white. Tints can be added at the time of manufacture to give a variety of colors. It is made in four standard colors—Natural, Buff, Cream and Ivory.

Fireproof and Sanitary—Old Newark Acoustical Plaster being made of gypsum formulated with other ingredients will not burn and will not harbor vermin. It makes a hard durable material and is not soft or spongy.

Absorption—Old Newark Acoustical Plaster has been tested by the National Bureau of Standards with the following results expressed in percent of sound absorbed for ½ and ¾-in. thickness, applied over a ¾-in. gypsum base coat on metal lath, acoustical plaster being finished with a steel trowel.

Cycle in.	256	512	1024	2048	Noise reduction
½" thick	.23	.47	.77	.71	.55
¾" thick	.34	.63	.74	.73	.60

For Auditorium Correction it is customary to emphasize the coefficient at the 512 cycle although consideration should be given to other frequency values. For quieting, the Noise Reduction coefficient is recommended which is an average of the coefficient values from 256 to 2048 cycles.

Sales and Distribution—Old Newark Acoustical Plaster is sold through building supply dealers. It is packed in 50-lb. paper bags and is applied by the plastering contractor in lieu of the usual finish coat plaster. It is normally sold by the square yard of surface to be covered. This combined with job service by an experienced service man insures the proper application of the material to the required thickness.

OLD NEWARK NEAT PLASTER

Old Newark Neat Plaster is used for scratch and brown coats when mixed with sand over gypsum lath, wood lath, metal lath, brick, gypsum and clay tile.

OLD NEWARK GAUGING PLASTER

This product is made from specially selected calcined gypsum to insure excellent working qualities and color. It is used with lime putty to obtain the regular hard white finish on walls and ceilings.

OLD NEWARK MOULDING PLASTER

This product is made from the highest grade gypsum rock and is a pure white plaster for casting or moulding work, or as a substitute for quick set gauging plaster. It develops little heat in setting, resulting in low expansion and contraction.

We guarantee that Old Newark Plasters comply with all the requirements of Federal and A.S.T.M. specifications.

THE MATHIESON ALKALI WORKS (INC.)

GYPSUM DIVISION

Manufacturers and Distributors

1625 Eckington Place, N. E.

WASHINGTON, D. C.

EXECUTIVE OFFICES: 60 East 42nd Street, NEW YORK, N. Y.
BRANCH OFFICE: First National Bank Building, CHARLOTTE, N. C.
MILLS AT SALTVILLE, VA., and NORTH HOLSTON, VA.

A COMPLETE LINE OF GYPSUM AND RELATED BUILDING PRODUCTS

Products

GYPSUM PLASTERS:
Southern, Cherokee, Boone and *White Top*—fibered and unfibered.
Southern and *White Top*—wood fibered.
GYPSUM WALLBOARD and LATH:
Mathieson and *Southern* brands.
GYPSUM BLOCK:
Southern brand—hollow and solid.
Also Concrete Special Bond Plaster; Pioneer Gauging Plaster, Pioneer Moulding Plaster and Keene's Cement (manufactured by Best Bros.); Metal Lath Products; Ohio Finishing Lime; Hydrated Lime.

Gypsum Plasters

MATHIESON Gypsum Plasters are made from pure gypsum rock, mined and manufactured at our North Holston, Va., mines and mills and are marketed under the above listed brands.

Our large testing laboratories assure you of A-1 quality plaster, uniform at all times and manufactured with the latest Raymond and Tube mills.

All Mathieson Gypsum Products are of greater strength and purity than are required by A.S.T.M. and U. S. government specifications.

Gypsum Block

Southern brand Gypsum Block are of the highest quality, fire-resisting, heat, cold and sound-resisting. They are light-weight and the correct material for interior, non-bearing partition, beam and column covering and wall furring.

Sizes—12x30 inches; thicknesses 2 and 3 inches solid; 3, 4, 5 and 6 inches hollow.

Gypsum Wall Board

Southern and *Mathieson* Wall Boards are finished wall materials. They are gypsum rock wall boards, light in weight and of great strength and rigidity; will not warp or shrink.

Sizes—Manufactured in 6 to 12-foot lengths; uniform thicknesses of ¼, ⅜ and ½-inch.

Gypsum Lath—Perforated and Plain

Produced in the same manner as gypsum wall board and is a perfect plaster base.

Sizes—⅜ and ½-inch thicknesses. Standard sizes are 16x32 and 16x48 inches, bundled; also 24x32 and 32x36 inches, unbundled.

Metalized Wall Board and Lath

Southern and *Mathieson* Gypsum Wall Board, metalized "aluminum foil." In all sizes.

Southern and *Mathieson* Metalized Lath, "aluminum foil"—a reflective insulation. Size —16x48x⅜ ins.

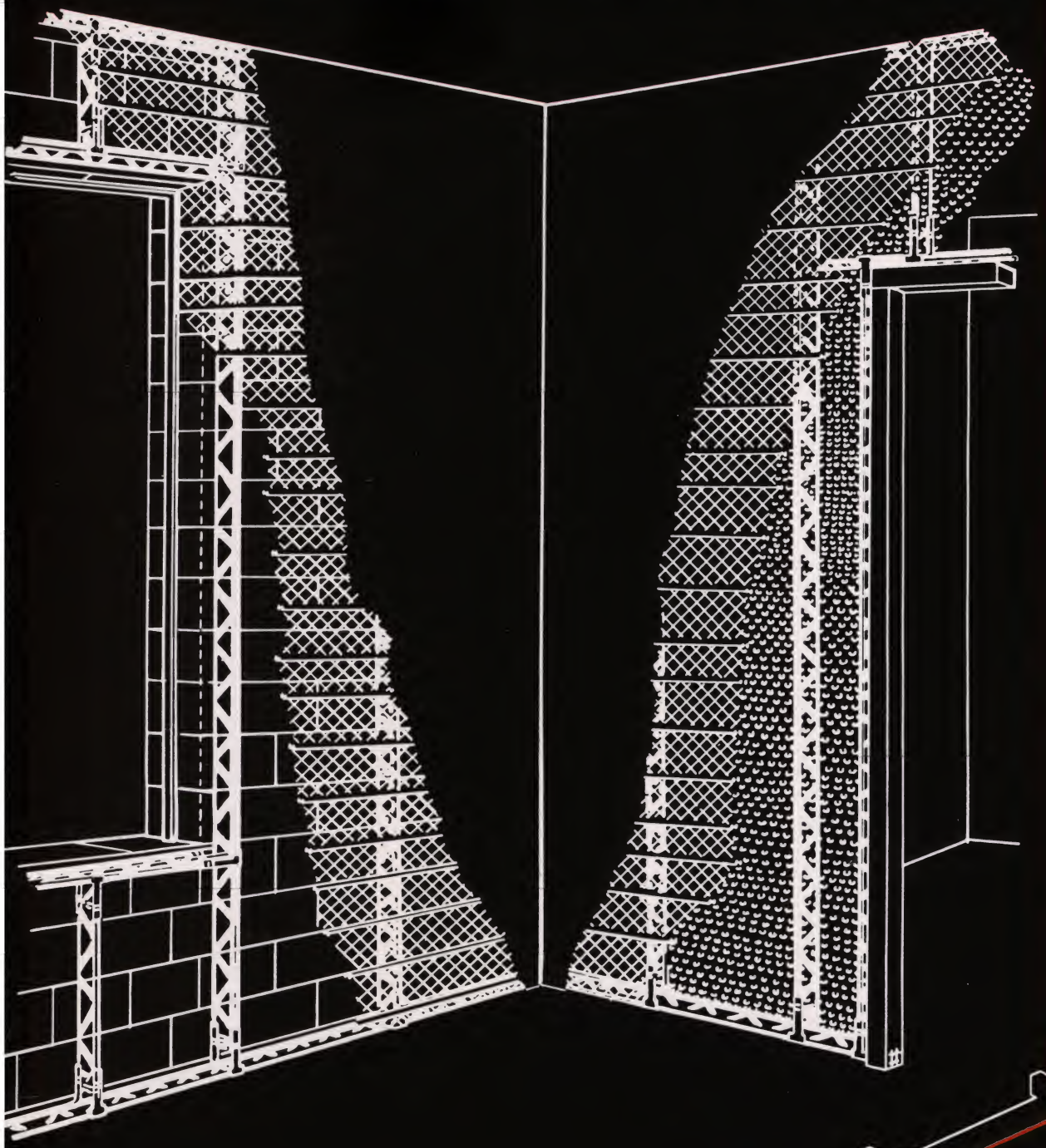
Other Products

We are in position to supply in mixed cars:

Hydrated Lime; Ohio Finishing Lime; Best Bros. White Gauging, Moulding and Casting Plasters and all grades of Keene's Cement; Metal Lath; Insulating Board; Gypsum Rock for cement manufacturers; Stucco for glass and marble manufacturers and Agricultural Gypsum.

Mathieson's Products Are Always Your Assurance of Quality

A MANUAL FOR ARCHITECTS, ENGINEERS AND CONTRACTORS



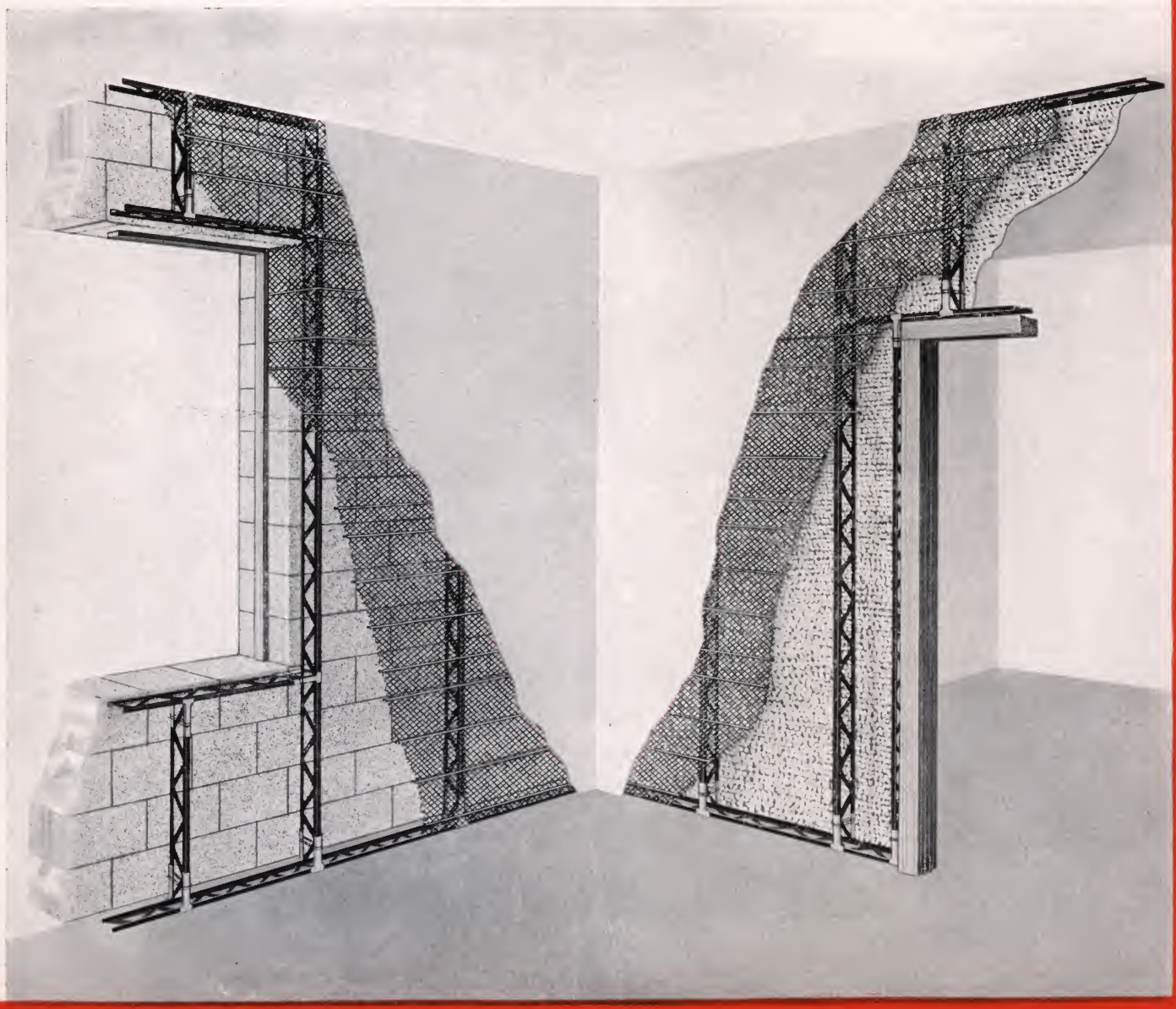
THE CONSOLIDATED EXPANDED METAL CO'S.

Steelcrete

BAR-Z-SYSTEM

NON-BEARING PARTITIONS
FREE STANDING WALL FURRING

BAR-Z-SYSTEM NON-BEARING STEEL STUD PARTITIONS AND FREE STANDING WALL FURRING



IN the following pages we have endeavored to present pertinent data and details relative to the Bar-Z-System of Non-Bearing—Non-Burnable—Hollow Plastered Steel Stud and Metal Lath Partitions, also the Bar-Z-System of Free Standing Wall Furring.

All recommendations and details herein presented are based on a study of best practices as developed in the actual use of these systems and products in many hundreds of structures, large and small, throughout the United States, over a period of years, since we first introduced these systems and products in 1930.

A study of the following data will indicate that substantial reductions can be effected in the dead load carried by floors, framing and footings of a structure, also that the installation of plumbing, heating, ventilating and electrical work can be considerably simplified by using Bar-Z-Partitions and Bar-Z-Wall Furring as compared with block or masonry types of partitions and furring. These features, obviously, make possible actual monetary savings in the job as a whole.

Bar-Z-Partitions and Bar-Z-Wall Furring, of themselves, cost no more, and under many conditions cost less, than the heavier block or masonry types and still provide the highly important practical features of **Rigidity—Light Weight—Fire Safety—High Resistance to Penetration of Sound through Partitions** and **No Breaking of the Waterproofing Seal** on Furred Exterior Walls.

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Printed in U.S.A.

...These units—erected and plastered—form the BAR-Z-SYSTEM

Bar-Z-Stud

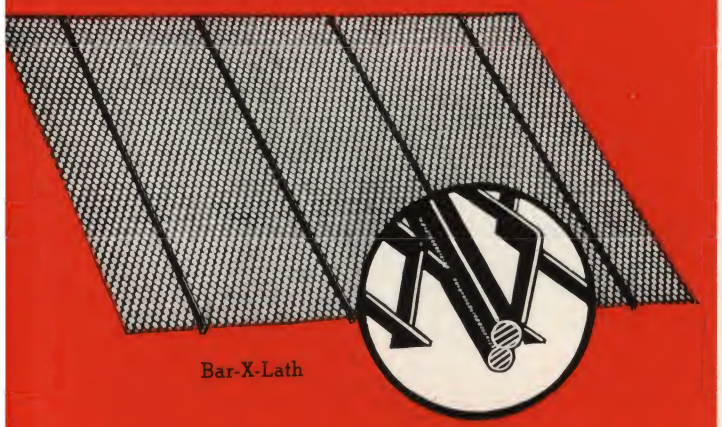
Bar-Z-Shoe

Tie Wire

Bar-Z-Track

Cross Clip

Rawl Drive



Bar-X-Lath

BAR-Z-STUD

Bar-Z-Studs are 16-gauge cold formed steel channels having alternately opposed triangular openings in the web to form a truss-like member. These studs are made in lengths up to 20 feet. Floor and ceiling tracks are of similar design but slightly wider. 2, 3, 3¼ and 4 in. tracks are furnished in lengths of 10 ft. Tracks for 6⅛ in. studs are furnished in lengths of 16 ft. All Bar-Z-Studs and Track are furnished painted black.

The following table shows stud widths, weights and recommends spacing for given heights, when used with Bar-X-Lath. Heights greater than 20 ft. require splicing in field.

Stud Width Overall	Weight per Thousand lineal feet Stud-or-Track	Finished Plastered Wall Thickness	Permissible Heights for Indicated Spacing		
			24 in. o.c.	19 in. o.c.	16 in. o.c.
2 inches	409 lbs.	3½ inches	10 feet	15 feet	18 feet
*3 inches	470 lbs.	4½ inches	12 feet	17 feet	20 feet
3¼ inches	494 lbs.	4¾ inches	13 feet	18 feet	21 feet
4 inches	660 lbs.	5½ inches	16 feet	20 feet	22 feet
6⅛ inches	850 lbs.	7⅝ inches	20 feet	24 feet	26 feet

*Note: 3 in. Stud made on special order only.

BAR-Z-SHOES

Bar-Z-Shoes are used to attach the studs to the floor and ceiling tracks. Four shoes required for each stud.

Top and bottom shoes for 2, 3, 3¼ and 4 in. studs are interchangeable, are 5 in. long and weigh 72 lbs. per thousand pieces. For 6⅛ in. studs top shoes are 12 in. long, bottom shoes 4½ in. long and weigh 356 lbs. and 147 lbs. per thousand pieces respectively. Cost of shoes included in price of studs.

TIE WIRE

Tie wire for attaching the shoes, grounds, lath and other units to the studs is 18-gauge Cop-R-Loy zinc coated Certified Steelcrete Quality. It is packed in cartons weighing approximately 25 lbs.

TRACK FASTENINGS

Cross Clips, spaced approximately 4 ft. o.c. and both sides of each opening, are recommended for fastening tracks to concrete or masonry floors or ceilings with 1¼x3/16 in. "Rawl-Drives" or lead shield and anchor nails. When "Rawl-Drives" are used a 3/16 in. hole is drilled in the concrete, on center line of track, and the "Rawl-Drives" driven through the hole in the Cross Clip and into the concrete like a nail. Cross clips fit "snug" inside the track and can be made on the job or purchased from us. This method insures alignment and prevents shifting or loosening of track during construction prior to plastering.

BAR-X-LATH

Bar-X-Lath consists of Steelcrete Diamond Expanded Metal Lath to each sheet of which 4 pairs of No. 11 rods, spaced on 7-in. centers are welded. The rods forming each pair are welded to each other through the meshes of the lath longitudinally of the sheet—thus forming an extremely rigid sheet which acts as a cross bridging between studs. Bar-X-Lath is furnished weighing 3.4, 4.2 or 4.6 lbs. per sq. yd. The 3.4 lb. is generally used for most types of construction. The 4.2 and 4.6 lb. are recommended for severe or unusual conditions.

Bar-X-Lath is especially designed for use on 24 in. spacing of studs and for reasons of economy this spacing should be adhered to whenever heights as noted in above table will permit.

For Partition Work, Bar-Z-Studs are sold only with Bar-X-Lath.

ERECTION

These stock units are usually erected on the job by metal lathers who are skilled in this type of work with the result that the erection proceeds more rapidly than other types of partition construction. Furthermore, since lathing mechanics are usually employed on most jobs for metal lath ceiling construction and the placing of corner beads, metal grounds and metal lath furring, all work in these lines can properly be combined in one contract and proceed, to the benefit of the job, under one supervision and responsibility.

Complete stocks carried in Branch Warehouses and Mill.

A few who have used BAR-Z-SYSTEM

Home for Incurables, Philadelphia, Pa.
Architect—Ballinger Company, Philadelphia

Administration Building, Compton Junior College, Compton, Calif.
Architects—John C. Austin, F.A.I.A. and Fredric M. Ashley, A.I.A.,
Los Angeles, Calif.

ONE of the best methods of judging the merits of any product is to carefully examine a list of the users and the structures in which the product has been installed. We are proud to offer the reader a partial list below because it indicates, as can no other evidence, the unquestionable satisfaction which the Bar-Z-System of Partition Construction has given since 1930 in all types of buildings in all sections of the United States.

NEW ENGLAND

Worcester City Hospital
Worcester, Mass.
Architects—
Stevens, Curtin & Mason
Boston, Mass.

Hale Hospital
Haverhill, Mass.
Arch's.—Coolidge, Shepley,
Bulfinch & Abbott
Boston, Mass.

State Prison Dormitories
Norfolk, Mass.
Arch's.—McLaughlin & Burr
Boston, Mass.

Monastery of St. Clare
Jamaica Plain, Mass.
Arch.—John A. McPherson
Boston, Mass.

Economy Grocery Stores Corp.
General Office Building
South Boston, Mass.
Arch.—Isidor Richmond
Boston, Mass.

Ethel Walker School for Girls
Simsbury, Conn.
Arch.—Milton E. Hayman
Hartford, Conn.

East Hartford Town Hall
East Hartford, Conn.
Arch's.—Ebbets & Frid
Hartford, Conn.

Underwood Elliot Fisher Co.
Hartford, Conn.
Engineers—Lockwood, Greene
New York, N. Y.

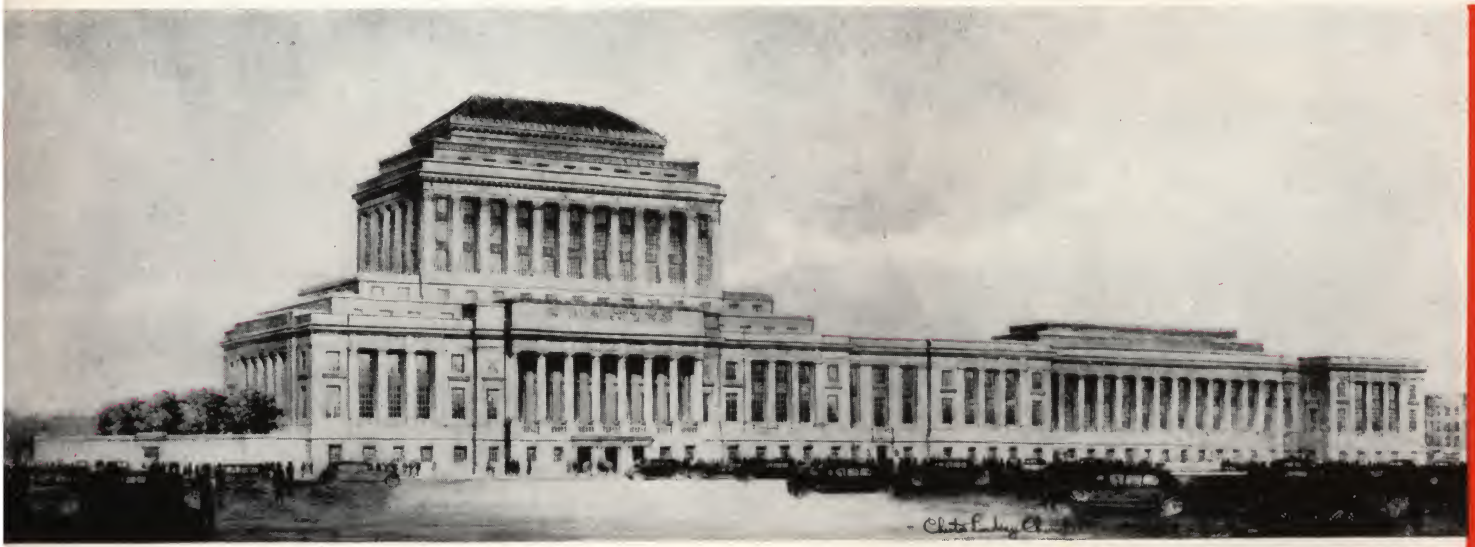
Nurses Home
Hartford Retreat
Hartford, Conn.
Arch.—Donald F. Hiscox
Hartford, Conn.

Almshouse & Jail
Merrimac County
Boscawan, N. H.
Arch.—Harry G. Forrest
Concord, N. H.

Morse Memorial School
Brooks, Maine
Arch's.—Pulsifer & Eye
Lewiston, Me.

Female Ward Building
State Hospital
Waterbury, Vt.
Arch.—Frank Lyman Austin
Burlington, Vt.

Burrilville High School
Burrilville, R. I.
Architects—
Jackson, Robertson & Adams
Providence, R. I.



Christian Science Publishing Society, Boston, Mass. Architect—Chester Lindsay Churchill, A.I.A., Boston

PARTITIONS

A Steelcrete Product

Griffith Observatory, Los Angeles, Calif.
Architects—John C. Austin, F.A.I.A. and Fredric M. Ashley, A.I.A., Los Angeles, Calif.

MIDDLE ATLANTIC

Palisades N. Y. Grade School
Palisades, N. Y.
Arch.—Lawrence Licht

City Hospital
Lockport, N. Y.
Arch.—Will Alban Cannon
Niagara Falls, N. Y.

North High School
Binghamton, N. Y.
Arch.—Lester J. Kaley
Binghamton, N. Y.

Bayonne High School
Bayonne, N. J.
Arch.—Fanning & Shaw
Paterson, N. J.

Marine Barracks
Lake Denmark, N. J.
Arch.—U. S. Navy
Washington, D. C.

Temple University
Philadelphia, Pa.
Arch.—A. W. Lee Company
Philadelphia, Pa.

Liberal Arts Building
Library Building
F & M College, Lancaster, Pa.
Arch.—W. H. Lee
Philadelphia, Pa.

Home for Aged Friends
West Chester, Pa.
Arch's.—Heacock & Hokanson
Philadelphia, Pa.

St. Luke's Hospital
Bethlehem, Pa.
Arch's.—Lovelace & Spillman
Bethlehem, Pa.

Girl's Dormitory Building
State College, Pa.
Arch.—Charles Z. Klauder
Philadelphia, Pa.

Board of Education Office Building
Pittsburgh, Pa.
Arch.—M. M. Steen
Pittsburgh, Pa.

SOUTHERN

Officers Apartments (14)
Quantico, Va.
Arch.—U. S. Navy
Washington, D. C.

Veterans Administration Facility
Hampton, Va.
Arch.—Veterans Administration
Washington, D. C.

Dormitory Buildings
West Virginia University
Morgantown, W. Va.
Arch's.—Warne Tucker & Selling
Charleston, W. Va.

Denmar Sanitorium
Denmar, W. Va.
Arch.—J. C. Burchinal
Wheeling, W. Va.

Myrtle Apartments
Charlotte, N. C.
Arch.—C. W. Connelly
Charlotte, N. C.

John F. Seagle Building
University of Florida
Arch.—Rudolph Weaver, State Arch.
Gainesville, Fla.

Veterans Administration Facility
Johnson City, Tenn.
Arch.—Veterans Administration
Washington, D. C.

Veterans Administration Facility
Biloxi, Miss.
Arch.—Veterans Administration
Washington, D. C.

Lagunita Court, Stanford University, Palo Alto, Calif. Architect—Bakewell and Brown, San Francisco, Calif.

Sonoma County Hospital, Santa Rosa, Calif. Architect—John I. Easterly, Santa Rosa, Calif.

Naval Air Station
Pensacola, Fla.
Arch.—U. S. Navy
Washington, D. C.

New Savannah High School
Savannah, Ga.
Arch's.—Levy & Clark;
Cletys W. Bergen
Savannah, Ga.

Fulton County High School
Hapeville, Ga.
Arch's.—Hentz, Adler & Shutze
Atlanta, Ga.

Oak Grove Apartments
Dallas, Texas
Arch's.—Fooshee & Cheek
Dallas, Texas

River Oaks Community Center
Houston, Texas
Architects—
Stayton Nunn & Milton McGinty
Houston, Texas

Humble Oil Refining Co. Office Building
Baytown, Texas
Architects—
Stayton Nunn & Milton McGinty
Houston, Texas

NORTH CENTRAL

Franklin County Hospital
Columbus, Ohio
Arch.—W. H. Tremaine
Columbus, Ohio

Glenville Hospital
Cleveland, Ohio
Arch.—Geo. S. Rider Co.
Cleveland, Ohio

Veterans Administration Facility
Marion, Ind.
Arch.—Veterans Administration
Washington, D. C.

Lamphier High School
Springfield, Ill.
Arch.—Carl T. Meyer
Springfield, Ill.

Feitshams School
Springfield, Ill.
Arch's.—Helmie & Helmie
Springfield, Ill.

Veterans Administration Facility
Danville, Ill.
Arch.—Veterans Administration
Washington, D. C.

Brown County Mental Hospital
Green Bay, Wis.
Arch.—Foeller, Schober & Berners
Green Bay, Wis.

Federal Prison
Sandstone, Minn.
Supervising Arch.—Treasury Dept., Washington, D. C.

Rockhurst College
Kansas City, Mo.
Arch.—Carroll & Dean
Kansas City, Mo.

Senior High School
Stevens Point, Wis.
Arch.—Law, Law & Potter
Madison, Wis.

WESTERN

Training School
American Fork, Utah
Arch.—Scott & Welch
Salt Lake City, Utah

Dee Memorial Hospital
Ogden, Utah
Arch's.—Young & Hansen
Salt Lake City, Utah

Whipple Barracks
Whipple, Arizona
Arch.—Veterans Administration
Washington, D. C.

San Diego Post Office
San Diego, Calif.
Arch.—Wm. Templeton Johnson
San Diego, Calif.

Polytechnic High School
Los Angeles, Calif.
Arch.—A. C. Martin
Los Angeles, Calif.

Inglewood High School
Inglewood, Calif.
Arch.—T. C. Kistner
Los Angeles, Calif.

Santa Monica High School
Santa Monica, Calif.
Arch.—Marsh, Smith and Powell
Los Angeles, Calif.

Golden Gate Bridge Toll Plaza
San Francisco, Calif.
Arch.—Morrow & Morrow

Palomar Observatory
Palomar Mountain,
Palomar, Calif.
Arch. & Eng.—California Institute of Technology
Pasadena, Calif.

St. Mary's Hospital
Long Beach, Calif.
Arch.—I. E. Loveless
Long Beach, Calif.

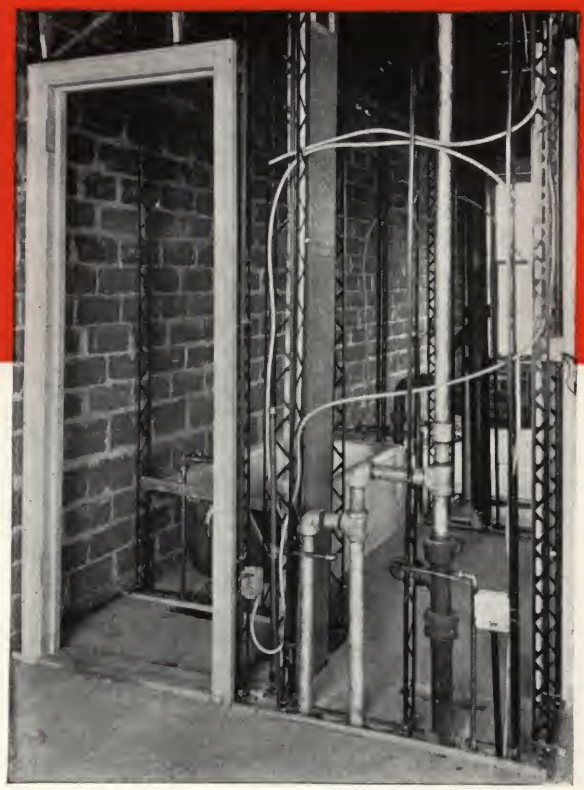
State Highway Office Building
Sacramento, Calif.
Arch.—State of California

Hospital, Barracks & Post Exchange Building
Ben Ali, Calif.
Arch.—United States Army Construction Quartermaster

Huron Road Hospital, East Cleveland, Ohio
Engineer—Geo. S. Rider Co., Cleveland, Ohio

Jeremiah E. Burke High School for Girls, Boston, Mass.
Architect—George Ernest Robinson, Boston

Seven REASONS FOR USING BAR-Z-PARTITIONS



Showing Ease of Installation of Piping and Wiring in a Bar-Z-Partition

SUCH widespread use of the Bar-Z-Partition as is evidenced by the list of users on the preceding pages can only be accounted for by the merits and advantages of the System. Repeated use by prominent architects means complete satisfaction and it is worth noting that these installations are in all types of structures. Below we present some of the reasons for this popularity of the Bar-Z-Partition.

(1) ADAPTABILITY

With the ever-increasing use of air conditioning, electrical appliances and other conveniences provision for supply ducts, pipes, wires, cables and conduits without objectionable projections into rooms or corridors presents a serious problem. In hospitals, schools and office buildings the question of how to conceal these necessary accessories is doubly important.

PIPES AND CONDUITS

The accompanying illustrations show how the Bar-Z-Partition provides for the passage of normal sizes of pipe and conduits through the openings in the studs. They may be run vertically, horizontally or inclined; there are no chases to cut when Bar-Z-Partitions are used.

WIRES, CABLES AND OUTLETS

Wires and cables for electrical, telephone or other purposes may be run through the triangular openings of the stud and, where they run into the floor or ceiling, they can pass through these openings in the tracks. Installation of outlet boxes may be made in practically any location as shown in the drawing on page 16. Junction and fuse boxes are readily provided for and a typical method of framing is detailed on Page 16.

DUCTS AND VENT PIPES

Concealing ventilating and air conditioning ducts is necessary in practically every type of structure and is readily accomplished in a Bar-Z-Partition. In schools and hospitals chemical laboratory fume ducts can be carried in the partitions and completely concealed. In such cases, care should be taken that adequate dampers be provided to conform to fire and safety regulations.

Fuse Boxes and Panel Boards Readily Fit into a Bar-Z-Partition

(2) FIRE AND IMPACT RESISTANCE

Bar-Z-Non-Bearing Steel Stud Partitions afford one hour or more fire rating depending on the type of plaster used.

These partitions are constructed entirely of non-combustible materials—steel studs, Bar-X-Lath, metal grounds and plaster; so there is nothing in them to burn or transmit flames from one part of a structure to another. Practical experience in actual construction since 1930 has led to the development of such accessories as the metal grounds which are shown in the details on Page 17. These grounds can have a full thickness of plaster between flanges thus eliminating any open space back of wood chair rail, base or mouldings which might conduct heated air or flame if the trim should be burned off in a fire.

An extensive series of tests on Bar-Z-Partitions was conducted at the Bureau of Standards in Washington in 1934. These tests included different thickness of partitions and also fire-and-water tests to determine the resistance of the partition to a powerful stream of water after exposure to a specified fire temperature and time period. Bar-Z-Partitions passed both of these tests for fire safe construction with a one hour rating using sanded gypsum plaster.

A description of these tests is contained in "Report on Fire Tests of Six Hollow Partitions framed with Metal Studs and faced with Gypsum Plaster on Metal Lath—Test No. T.B. 362-21, F.R. 451." Copies can be obtained from the Bureau or the District Offices of the Company.

Building Departments in practically all large cities have approved the Bar-Z-Partition and, as noted on preceding pages, it has been extensively used in hospitals, schools and many other types of buildings.

In connection with the actual resistance of this partition to fire it should be remembered that the Bar-Z-Partition is a complete, strong and resistant unit. For this reason impact at any point on the partition is absorbed by the entire structure of the partition. This characteristic is important in its relation to fire resistance of a partition since under fire conditions, impact, from explosion, falling debris or a fire stream is common. An important use is now made of Bar-Z-Partitions in power houses to form the cells or rooms containing transformers which occasionally "blow-up."

(3) STRENGTH AND BRIDGING ABILITY

SINCE the Bar-Z-Partition is used only in non-bearing construction the usual interpretation of the term "strength" has little or no application. However, the form of construction of the Bar-Z-Partition—of truss-like steel studs, especially stiffened Bar-X-Lath and plaster—forms a stiff, impact-resisting wall which offers one outstanding advantage seldom, if ever, provided by the usual block or small unit type of partition. This characteristic is known as "Bridging Ability." To understand and appreciate exactly what is meant by bridging ability the reader should note the following:

A normal floor slab acts as does a beam with its weakest point in the center and its strength increasing to a maximum at its points of support. Therefore, if a partition can be so constructed that its weight can be considered as either uniformly spread or as being carried to the ends of the partition and transferred to structural beams or girders, such a partition would offer unusual advantages. It would eliminate the necessity for providing special structural support, along the line of partition, under the floor on which the partition rests and would permit placement of the partition wherever desired without regard to such additional support.

Bar-Z-System provides such a partition. This was conclusively demonstrated in tests conducted by the Consolidated Expanded Metal Companies with the cooperation of several members of the staff of the Building Department of the Board of Education, Pittsburgh, Pa., as observers. As the result of these tests and other investigations by the Board, the Bar-Z-Partition construction has been approved for school work in the Pittsburgh territory.

THE PITTSBURGH TEST

Material Tested.....3¼ in. stud, Bar-Z-Partition, plastered 2 coats, 2 sides, ordinary construction. 3.4 lb. Bar-X-Lath.

Partition Size.....20 ft. 0 in. x 11 ft. 6 in.

Special Conditions..Blocked up 6 in. from floor; 4-in. blocks at each end; wedged up plank between each block.

Erection Dates.....Bar-Z-Tracks, Studs (24 in. o.c.), Bar-X-Lath—Dec. 18, 1935.

Plastered 2 coats, 2 sides—Dec. 20, 1935.

Wedges removed—Dec. 27, 1935.

Result.....No deflection after removing wedges—Dec. 27, 1935.

1/16 in. deflection after heavy traffic vibration —Dec. 30, 1935.

Conclusions.....**1.** Bar-Z-Partition bridges itself the complete width of an ordinary classroom.

2. The strong modern plaster, in conjunction with the solid ribs of the metal lath used, apparently acts as would a deep section concrete beam under similar conditions.

3. The weight of Bar-Z-Partitions can either be considered as uniformly spread or as being carried to the ends of the partition.

4. If, and when, live or other loads deflect the slab, the Bar-Z-Partition does not impose its load with the deflecting load—it transfers its weight to the shear sections of the ends of the supporting slab.

Further tests on this same partition are described on Page 12.

WHAT THIS MEANS TO THE DESIGNER AND OWNER

In many types of buildings particularly in schools and office buildings the owner and architect are constantly confronted with problems requiring the changing of partition locations. With the usual type of partition it is generally necessary to design the floor slabs extra heavy so that the partition can be placed at any point or else provide extra strength in the floor slab under the line of the partition. With the Bar-Z-Partition, due to its "bridging ability" and considering "conclusion three" above, no additional provision for dead load is necessary—*with the possible exception that a nominal amount might be added to the uniform loading calculations for slabs if considerable future partition installation is anticipated.* Special supports under Bar-Z-Partitions are not necessary.

Test Partition, Pittsburgh Board of Education, Pittsburgh, Pa. Partition Supported Only on Blocks at Each End.

Test Partition, Pittsburgh Board of Education, Pittsburgh, Pa. Doorway Cut in Partition as Described on Page 12.

(4) ECONOMY

COMPARATIVE COST

Bar-Z-Partitions and Bar-Z-Wall Furring of themselves, cost no more, and in many cases cost less than block or masonry types. Finished costs in different sections of the Country naturally vary with local wage scales and other factors; but the relative basic facts as noted above remain true.

ADDITIONAL SAVINGS

Additional economy or savings—both direct and contributory—are made possible when the Bar-Z-System is used—and should be given consideration—some of these factors are outlined in the following—and others will undoubtedly occur to the reader in connection with specific projects.

NO CHASE CUTTING OR PATCHING EXTRAS

The elimination of these items of "extra expense" is of considerable moment; for, as is well known, they are seldom, if ever, "carried" in the original estimate for block partition, and usually "bob up" as the job proceeds to make a surprisingly large total of "Extras" which, had they been known in advance, might have eliminated block partitions from consideration by reason of this extra cost. This is particularly true in the case of hospitals, hotels, dormitories, schools and office buildings—where, for convenience and space-saving, large amounts of electrical, plumbing, heating and ventilating work must be concealed within the partition walls. Reference to the illustrations on page 7 and the construction details on the following pages will indicate the practicability of the Bar-Z-System for concealing such work **at no extra cost.**

MECHANICAL TRADES SAVINGS

The Bar-Z-System makes possible substantial savings in the co-operating mechanical trades—such as electrical, plumbing, heating, ventilating and air-conditioning. These trades can lay out their "roughing in" along the previously marked lines of the partition and can work in their risers and runs either before or after the studs are erected. The openings in the studs form excellent paths for horizontal runs of piping or conduit, and greatly facilitate installation. Hangers or supports of heavy fixtures as shown on page 16, detail No. 27 are attached before lathing.

Thus the work of all trades can proceed practically in unison with less than usual "back-tracking" or delay. The net result being more rapid completion of the work as a whole—which is important where time is a factor.

SAVINGS DUE TO LIGHT WEIGHT AND "BRIDGING ABILITY"

These two features of the Bar-Z-System, not found in block type partitions, combine to effect economies in the structural elements of a building insofar as they permit of lighter floor construction with consequent less dead load to be transmitted to beams, girders, columns and footings.

When these factors are considered and allowed for in the structural design, savings of considerable magnitude are possible, particularly in multi-story buildings for light occupancy, where large amounts of partition are necessary . . . as for instance in hotels, office buildings, apartments, etc. Extra heavy floors are not required to take care of possible re-location of Bar-Z-Partitions.

For alteration work in old buildings these features are doubly important, since the construction used in many old buildings will not permit the use of a masonry type of partition because of the extra weight which would be imposed on the old floors.

Bar-Z-Partitions plastered to a normal thickness of ¾" over the stud, on two sides weighs from 18 to 20 pounds per square foot of surface, depending on the size and spacing of studs. Compared to the common types of block partitions of equal thickness, savings in dead weight ranging from zero up to 20 or more pounds per square foot of surface are shown.

In computing the comparable total weights of partitions in a building, the designer should remember that where suspended ceilings are used, the Bar-Z-System usually affords a considerable margin of weight saving, due to the fact that **Bar-Z-Partitions attach directly to the suspended ceiling and stop at that point,** whereas the block partition must usually extend full height to the structural slab above the ceiling in order to meet the requirements for lateral support.

The Bar-Z-System saves useless weight and cost above the suspended ceiling line.

SPACE SAVING

Generally a thinner Bar-Z-Partition may be used for a specified ceiling height than a masonry partition. As noted above, this is particularly true when a suspended ceiling is used since a block partition must be carried to the underside of the floor slab above the ceiling and as the height increases, thicker and heavier blocks must be used.

At maximum usable heights a 3¼" stud can be used for the same height of partition as a 6 in. tile, with a saving of 2¾ inches per lineal foot; likewise a 4 inch stud can be used for 8 inch tile or a saving of 4 inches per lineal foot. The respective savings here per 100 lineal feet of partition are 275 and 400 cu. ft. for a 12 ft. room height and 23 and 33 sq. ft. of floor space.

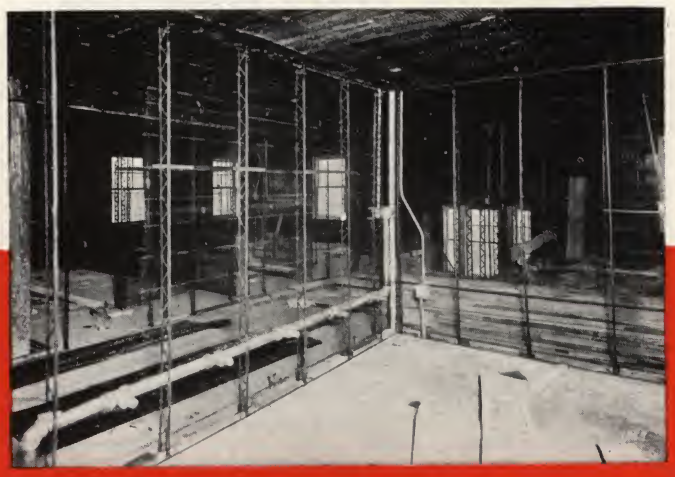
MISCELLANEOUS ECONOMIES

In addition to the above, there are other items which have an effect on the total saving resulting from the use of the Bar-Z-Partition. For example:

Freight, trucking, handling and loss by breakage are lessened with this form of construction.

A relatively small amount of space is required for the storage of materials on the job.

In many locations a substantial saving is made by the reduction in the costs of cleaning up debris.



Illustrating concealment of Horizontal and vertical pipe runs—"No chase cutting or patching extras."

Illustrating use of stud anchor for combination metal bucks and trim, see page 15 for details.

(5) SOUND INSULATION

THE well expressed thought of Dr. Vern O. Knudsen in his book "Architectural Acoustics," that "Freedom from the harassing effects of noise is one of the finest qualities a building can possess," should be accepted as one of the desired objectives of Architectural Designers.

This ideal is attainable in most structures to a satisfactory degree provided the designer will give the same amount of consideration to the conditions and elements which will affect the acoustics of a structure, as he does to those of structural and utilitarian character.

However, a proper evaluation of all the factors bearing on the attainment of the ideal is necessary and worthy of more than mere lay judgment. It is a proper subject for careful study and recommendation by unbiased and competent counsel. The designer who has not the necessary qualifications himself will, in our opinion, avoid much disappointment and needless expense by employing a professional Acoustical Engineer to advise him—even in the early stages of design.

In the following paragraphs we shall confine ourselves to the subject of partitions; comment briefly on other elements affecting their sound insulating properties, and present authoritative data regarding the sound insulating values of Bar-Z-Partitions, block type partitions, doors and windows. Tables showing recorded intensity levels of commonly recognized noises are included for the information of the reader.

Physically, partition walls and wall furring are an important part of most buildings. However, their importance and particularly their degree of efficiency as sound insulators is in most instances limited by the efficiency of other elements in the same structure, such as doors, windows, ducts, etc. These latter elements generally are far less efficient as insulators than the walls which they serve; furthermore, duct openings and even the usual small cracks around doors and windows are excellent "transmitters" of sound—thus, the presence of these elements and conditions frequently serve to materially reduce the effectiveness of an otherwise efficient wall.

It is essential, in the consideration of partitions that the designer have in mind a clear concept of the difference between "Sound Insulation" and "Sound Absorption." It can be generally stated that most good sound insulating mediums are poor sound absorbing mediums, and vice versa. To obtain both sound insulation and sound absorption, the absorbing material must be exposed to the source of sound; usually by placing it on the surface of the sound insulating medium.

For every type of structure there are present both inside and out, certain characteristic noises of varying intensity and frequency, depending on the type of occupancy and location. It is therefore essential that these conditions be definitely known, either through original investigation or from such published data as may be available and applicable.

LABORATORY AND FIELD TESTS BAR-Z-PARTITION

Bar-Z-Partitions as indicated by both laboratory and field tests conducted by Dr. William R. Barss, Acoustical Engineer and Consulting Physicist, of Cambridge, Mass., are efficient insulators against the transmission of air-borne sound.

Table I shows the transmission reduction factors in decibels at standard frequencies as obtained in laboratory tests. Subsequent field tests by Dr. Barss have confirmed these findings.

TABLE I
Sound Reduction Factors—Bar-Z-Partition

Stud Size and Spacing		Weight in Lb. per Sq. Ft.	Reduction Factors in Decibels for Standard Frequencies				
			128	256	512	1024	2048
2"	24"-o.c.	17.9	25.6	33.3	35.3	35.7	38.8
3¼"	24"-o.c.	19.1	23.8	34.1	39.1	42.5	38.6
4"	24"-o.c.	18.3	24.7	33.5	38.0	42.1	38.2
6⅛"	24"-o c	20.4	27.9	35.0	38.1	46.2	41.3
4"	16"-o.c.	19.1	29.2	36.9	38.9	44.2	43.4

All test panels were lathed with 3.4 lb. Bar-X-Lath and were plastered to a thickness of ¾" over the stud on each side using a standard brand of ready-sanded gypsum plaster for the scratch and brown coats, and a common white coat for finish. The lathing and plastering was done by Union journeymen mechanics regularly employed in their respective trades.

Considering the results indicated in Table I from a practical viewpoint, the use of 2", 3¼", 4" or 6⅛" Stud will not materially affect the transmission reduction value of Bar-Z-Partitions. Therefore the decision as to size of stud to use can be governed solely on the basis of utility, cost and structural factors involved in any specific project. The results shown indicate that where extreme heights require a closer stud spacing for structural reasons this can be safely done without detriment to the sound insulating qualities of Bar-Z-Partitions. Obviously, the 24" spacing of studs, wherever possible, should be adhered to for reasons of economy.

Bar-Z-Partitions, due to the combination of the diagonal truss-braced stud and the strong bridging effect of the solid ribs in Bar-X-Lath, forms an extremely rigid structure with a relatively high stiffness co-efficient, which tends to prevent drum heading action in the partition; and consequently builds up its resistance to sound transmission. These facts are undoubtedly largely responsible for the excellent results indicated by Dr. Barss' tests.

Cement Plastered Bar-Z-Partitions tested in the field by Dr. Barss showed about 1 Db. average increase for reduction factors as compared with similar construction with the same thickness of gypsum plaster. Additional tests on Bar-Z-Partitions with space between lath filled with mineral wool bats and cement plastered, show a further average increase in reduction factor of about 2 Db. as compared with unfilled partitions. From the viewpoint of Sound Insulation, this small increase would not justify the cost of mineral wool filling. However, for heat insulation it would be effective and probably would warrant the expense.

INCREASED SOUND INSULATION

Where greater sound insulation is required, a further increase in reduction factors may be obtained by constructing a partition consisting of two unbridged walls on separate lines of studs (see detail No. 26, page No. 16). The separation between lines of studs may be as little as one inch. Tests recorded by Dr. Paul E. Sabine in his book, "Acoustics and Architecture," indicate a reduction factor of 49.5 Db. for similar construction. Comparison with Table I indicates that increases in reduction factors ranging from 11 Db. to 15 Db. average may be expected for a double stud wall as compared with a single stud wall.

For comparative purposes, Table II on following page is taken from the book "Architectural Acoustics" by Dr. Vern O. Knudsen. These tests are credited to Dr. Paul E. Sabine. These data indicate that Bar-Z-Partitions have sound insulating value at least equal to clay tile or gypsum block partitions having the same or greater weights per square foot.

TABLE II
Sound Reduction by Block Type Partition

Description of Panel	Weight in Lb. per Square Foot	Reduction Factors in db For Standard Frequencies				
		128	256	512	1024	2048
Tile, hollow clay, 4", unplastered	17	24.5	24.1	26.1	35.5	29.8
Tile, like above, 1/2" plaster...	22	25.1	24.3	26.9	38.2	33.9
Tile, like above, 1" plaster....	27	27.3	26.9	30.3	39.8	39.8
Tile, like above, 1 1/4" plaster..	28.8	28.0	27.4	31.9	40.4	40.2
Tile, hollow gypsum, 3", unplastered	11.1	19.2	18.7	20.8	28.5	30.0
Tile, solid gypsum, 2", unplastered	10.4	18.1	18.1	20.4	25.3	27.9
Tile, like above, 1/2" plaster...	15.0	21.9	21.0	24.6	30.8	33.7
Tile, like above, 1" plaster....	19.6	22.9	23.8	27.5	36.9	37.6
Tile, like above, 1 1/4" plaster..	21.4	22.9	24.2	27.6	37.6	38.2
Tile, solid gypsum, 3", unplastered	14.2	19.4	19.0	21.9	33.5	35.4
Tile, like above, 1 1/4" plaster..	25.4	24.5	26.0	31.2	39.8	40.2

Previous reference has been made to doors and windows. We therefore quote from "Acoustics And Architecture" by Dr. Paul E. Sabine the data as shown by Table III & IV.

TABLE III
Sound Reduction by Doors and Windows

Number	Description	Average reduction, decibels
1	1/4-in. steel door	34.7
2	Refrigerator door, 5 1/2-in. yellow pine filled with cork	29.4
3	Solid oak, 1 3/4 in. thick	25.0
4	Hollow flush door, 1 3/4 in. thick	26.8
5	No. 4, as normally hung	24.1
6	No. 4, with 2 layers of 1/2-in. Celotex in hollow space	26.8
7	No. 4 with 1-in. balsam wool in hollow space	26.6
8	Light-veneer paneled door	21.8
9	Two-veneer paneled doors, with 2-in separation, normally hung in single casement	30.0
10	Window single pane 79x30 in. 1/4-in. plate glass	26.2
11	Window, 4 panes each 15x39 in. 1/4-in. plate glass	29.2
12	Window, 2 panes each 31x39 in. 3/16 in. plate glass	22.8
13	Same as 12, but double glazed, glass set in putty both sides, 1-in. separation	26.6
14	Same as 13, but with glass set in felt	28.9
15	Diamond-shape leaded panes, 3/16-in. glass	28.4
16	Window, 12 panes 10x19 in., 1/8-in. glass	24.7

TABLE IV
Reduction by Sound-proof Doors*

Material	Thickness, inches	Weight per square foot, pounds	Average reduction, decibels
Wood	2 5/8	6.85	30.2
Wood	2 7/8	7.00	30.7
Wood	3	7.65	31.5
Wood, steel sheathed	3	9.6	33.0
Wood, steel sheets, inclosed	3	11.6	35.6
Wood, lead sheets, inclosed	3	15.3	37.3

* These data are published with the kind permission of Mr. Irving Hamlin of Evanston, Illinois, and of the Compound and Pyrono Door Company of St. Joseph, Michigan, for whom these tests were made.

In order that the reader may obtain a reasonable idea of noise levels due to various sources under various conditions, Tables V and VI are reproduced from "Architectural Acoustics" by Dr. Vern O. Knudsen.

TABLE V

NOISE IN BUILDINGS

FROM JOINT D. & R. SUBCOMMITTEE SURVEY—NEW YORK DATA	NOISE LEVEL	DATA FROM OTHER SOURCES	SOURCE
	100	BOILER FACTORY	1
SUBWAY—LOCAL STATION WITH EXPRESS PASSING	95		
	90		
	85	SOME FACTORIES ARE AS HIGH AS THIS	2
	80	VERY LOUD RADIO MUSIC IN HOME	4
	75		
NOISIEST NON-RESIDENTIAL BUILDING LOCATION MEASURED	70	STENOGRAPHIC ROOM	3
AVERAGE OF 6 FACTORY LOCATIONS		VERY NOISY RESTAURANT	4
	65		
	60		
INFORMATION BOOTH IN LARGE RAILWAY STATION	55	NOISY OFFICE OR DEPARTMENT STORE	1
AVERAGE NON-RESIDENTIAL LOCATION	50	MODERATE RESTAURANT CLATTER	4
		FEW PLACES WHERE PEOPLE WORK ARE BELOW THIS	2
NOISIEST RESIDENCE MEASURED	45	AVERAGE OFFICE	1
	40	VERY QUIET RADIO IN HOME	4
		QUIET OFFICE	1
	35	SOFT RADIO MUSIC IN APARTMENT	3
QUIETEST NON-RESIDENTIAL LOCATION MEASURED			
AVERAGE RESIDENCE	30		
		COUNTRY RESIDENCE	1
	25	COUNTY COURT, CHICAGO, ROOM EMPTY, WINDOWS CLOSED	2
QUIETEST RESIDENCE MEASURED			
	20	QUIET GARDEN, LONDON	4

SOURCES:
1. H. Fletcher, "Speech and Hearing," P. 187. Marginal Audibility method with 3A audiometer and offset receiver, 17 DB added as approximate figure to convert to noise level.
2. D. A. Laird, Scientific American, Dec. 1928, P. 509. Balance method with 3A audiometer and receiver with flat cap. Approximately equal to noise level.
3. W. Waterfall, Engineering News Record, Jan. 10, 1927, P. 60. Same method as (2) above.
4. A. H. Davis, Nature, Jan. 11, 1930, P. 48. Balance or marginal audibility method with 640-cycle tuning-fork. Figures given in terms of sensation level, estimated equal to noise level.

. Noise levels in buildings. (Tucker.)

TABLE VI

NOISE LEVELS OUT OF DOORS DUE TO VARIOUS NOISE SOURCES

SURVEY OF NEW YORK CITY NOISE ABATEMENT COMMISSION		NOISE LEVEL	OTHER SURVEYS	
DISTANCE FROM SOURCE	SOURCE OR DESCRIPTION OF NOISE		SOURCE OR DESCRIPTION OF NOISE	SURVEY NO.
FEET		DB		
		130	THRESHOLD OF PAINFUL SOUND	4
		120		
2	HAMMER BLOWS ON STEEL PLATE—SOUND ALMOST PAINFUL (INDOOR TEST)		AIRPLANE, MOTOR 1600 R.P.M., 18 FT. FROM PROPELLER	5
		110	AERO ENGINE UNSILENCED—10 FT	4
		100		
35	RIVETER			
15-20	ELEVATED ELECTRIC TRAIN ON OPEN STRUCTURE	90	PNEUMATIC DRILL—10 FT.	4
			NOISIEST SPOT AT NIAGARA FALLS	2
			HEAVY TRAFFIC WITH	7
15-75	VERY HEAVY STREET TRAFFIC WITH ELEVATED LINE	80	ELEVATED LINE, CHICAGO	
15-50	AVERAGE MOTOR TRUCK		VERY NOISY STREET N. Y. OR CHICAGO	1
15-75	BUSY STREET TRAFFIC	70	VERY BUSY TRAFFIC, LONDON	4
15-50	AVERAGE AUTOMOBILE			
3	ORDINARY CONVERSATION			
15-300	RATHER QUIET RESIDENTIAL STREET, AFTERNOON	60	AVERAGE SHOPPING ST. CHICAGO	6
			BUSY TRAFFIC, LONDON	4
15-50	QUIET AUTOMOBILE		QUIET AUTOMOBILE, LONDON	4
	MINIMUM NOISE LEVELS ON STREET	50	QUIET ST. BEHIND REGENT ST., LONDON	4
15-500	IN ENTIRE CITY DAY TIME Min. Average			
50-500	IN ENTIRE CITY DAY TIME Min. Instantaneous	40		
50-500	IN MID-CITY NIGHT Min. Instantaneous			
		30	QUIET ST., EVENING, NO TRAFFIC SUBURBAN LONDON	4
		20	QUIET GARDEN, LONDON	4
			AVERAGE WHISPER—4 FT.	3
		10	QUIET WHISPER—5 FT.	4
			RUSTLE OF LEAVES IN GENTLE BREEZE	3
		0	THRESHOLD OF HEARING	

Noise levels in various out-of-door locations. (Galt.)

(6) EASE OF CONSTRUCTION AND ALTERATION

Ease of construction is one of the important features of the Bar-Z-Partition. The track is anchored to the floor and ceiling by clips and "Rawl-Drives" or expansion shields and nails or bolts. Where suspended ceilings are used the track is wired to the ceiling. After the tracks are properly aligned the studs are placed and plumbed and Bar-X-Lath wired to the studs. During the process of erection of the studs and the application of the lath the necessary grounds are placed as is shown by the details on pages 17-18 and 19. Such grounds and blocks are usually wired to the studs. The partition is then ready for plastering.

Door and other openings are framed by the addition of extra studs if necessary. Detail drawings showing this construction are given on Pages 14-15 and 16. The Bar-Z-Shoe makes it possible to erect a partition to meet practically any ceiling height with a minimum of cutting of studs since they permit adjustment.

In comparison with other partition materials note that all the necessary units, studs, lath, wire, etc. necessary to erect a Bar-Z-Partition 20 ft. long and 10 ft. high can be easily carried by one man.

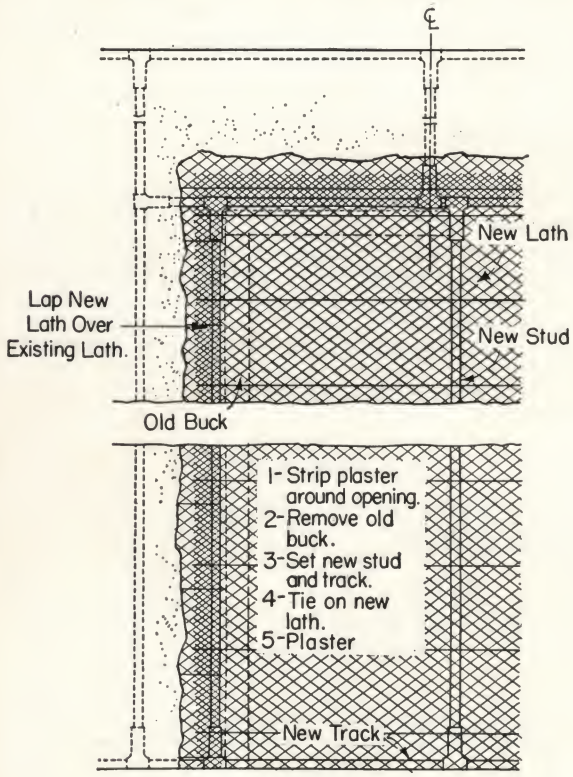
ALTERATION

Non-bearing partitions in many types of buildings are often subject to changes in locations, opening or closing of doorways, cutting for electrical changes and other alterations The Bar-Z-Partition meets such requirements with a minimum of muss, labor and disturbance.

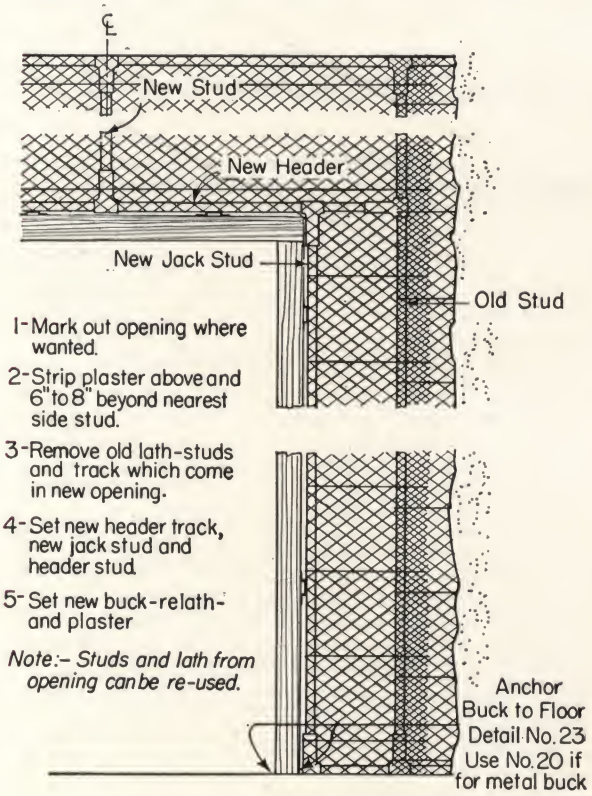
While a Bar-Z-Partition once built is permanent it can be readily dismantled and completely removed or cut into for openings. When necessary to cut an opening in a partition in an unforeseen location it is interesting to note that the test described on Page 8 conducted with the cooperation of observers from the Pittsburgh Board of Education, was carried farther than is mentioned on that page and an opening cut into the partition, about two months after the other tests, as shown in the illustrations on Page 8.

Bearing in mind that the partition was unsupported except at the ends, that no special double studs were used at the jambs as in ordinary construction (in fact the opening was cut at a theoretical "any point") and that the cutting was done with a hatchet and bolt cutters the cutting of the door was an extremely severe test of the materials involved in the construction of the Bar-Z-Partition as well as the partition system as a whole. Naturally the vibration of the actual cutting as well as the traffic vibration would in other types of partitions tend to destroy the suspended partition by cracking and deflection.

The day after the opening was cut the deflection was a "possible 1/16 in." at center of the partition. No cracks developed at "any point." Note that the partition did not rest on the floor slab except insofar as it was supported at each end by 4 inch blocks.



CLOSING EXISTING OPENING



CUTTING NEW OPENING

(7) MISCELLANEOUS FEATURES OF THE BAR-Z-PARTITION

TERMITE PROOF

In many sections of the country the invasion of termites and the tremendous ravages which they have made in all forms of wood construction have made termite proof studs, lath and grounds necessary for satisfactory results. The Bar-Z-Partition offers this protection to those types of buildings which might not ordinarily consider such form required.

RODENT PROOF

An all metal and plaster partition offers little inducement to rats and mice which is another factor to be considered in selecting partition construction.

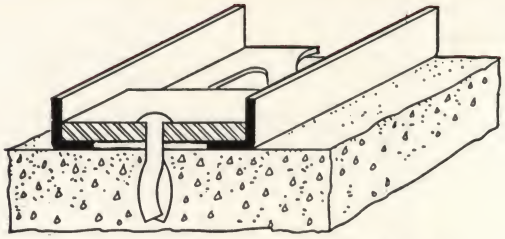
AIR CIRCULATION

Bar-Z-Partitions are approximately 98% hollow and due to the open truss design of the studs a free movement of air is possible within a large area equalizing the temperature applied at any point. The air circulation is of particular value in Bar-Z-Furring since it tends to prevent condensation on the exterior masonry wall.

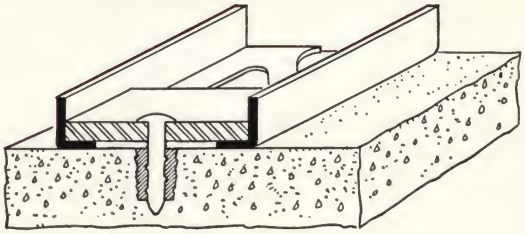
Details for Installing the BAR-Z-SYSTEM

The simplicity of the Bar-Z-Partition and Bar-Z-Furring is noteworthy and the adaptability with which it lends itself to various construction requirements is shown in the details on the pages following. The Bar-Z-Partition is a tried and proved system; it has been in actual use in hundreds of installations for many years. During this time certain standards have been developed as a result of practical experience and are shown on the following pages. These details will provide for practically any problem but if the architect or contractor does not find here the solution for his particular requirement, The Consolidated Expanded Metal Companies and its representatives will gladly cooperate in an effort to solve such problems as may be presented.

TYPICAL TRACK FASTENING AND CORNER CONSTRUCTION

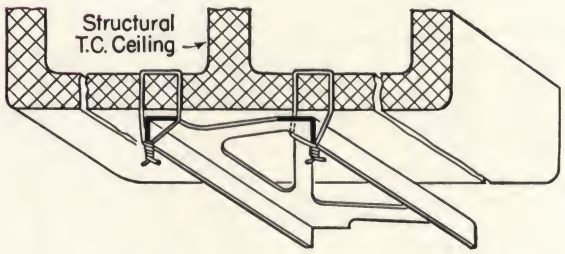


No. 1 - Cross Clip & 1¼"x3/16" or 1½"x3/16" Rawl Drive. No shield required

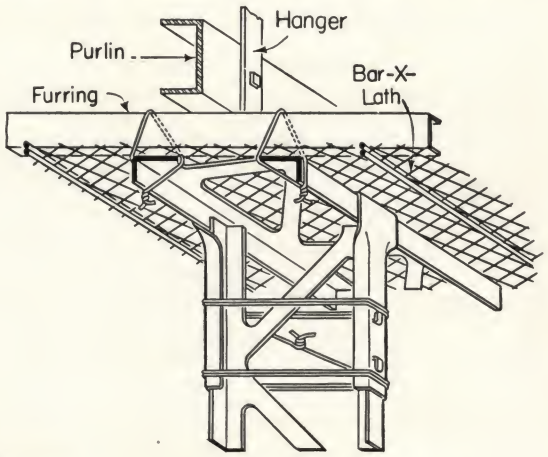


No. 2 - Cross Clip & 1½"x 3/16" Anchor Nail – With lead shield

Note:- Details 1 & 2 can be used for either floor or ceiling fastening to concrete – Track is centered on line of partition-holes drilled approx. 4'-0" oc. and at track ends and secured by cross clips as shown - These methods are economical and prevent shifting of track- If hard 3/4" stub nails are used in place of cross clip method, they should be driven into concrete through the holes provided in web member of track along center line.

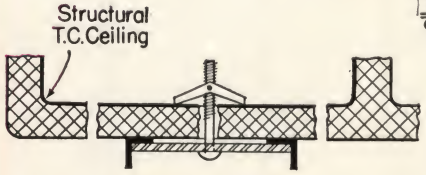


No. 3 - Wire Tied to Hollow T.C. as in "Republic Arch System" Tie holes are prick punched approx. 24" o.c.

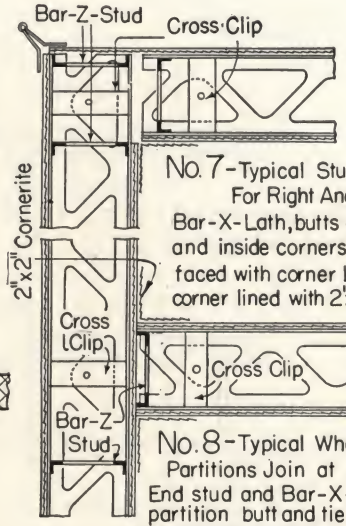


No 4 - Wire Tied Approx. 12" o.c. to Lath or Furring of Suspended Ceiling

No. 5 - Wood Sleepers Cast into Concrete Common nail fastening through holes in web of track.

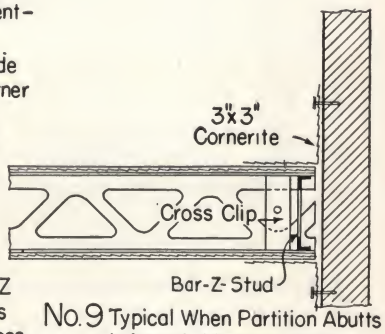


No. 6 - Cross Clip and Toggle Bolt to Hollow T.C. Approx. 4'-0" o.c.



No. 7 - Typical Stud Arrangement - For Right Angle Turn Bar-X-Lath, butts at both outside and inside corners - Outside corner faced with corner bead - Inside corner lined with 2"x2" Cornerite.

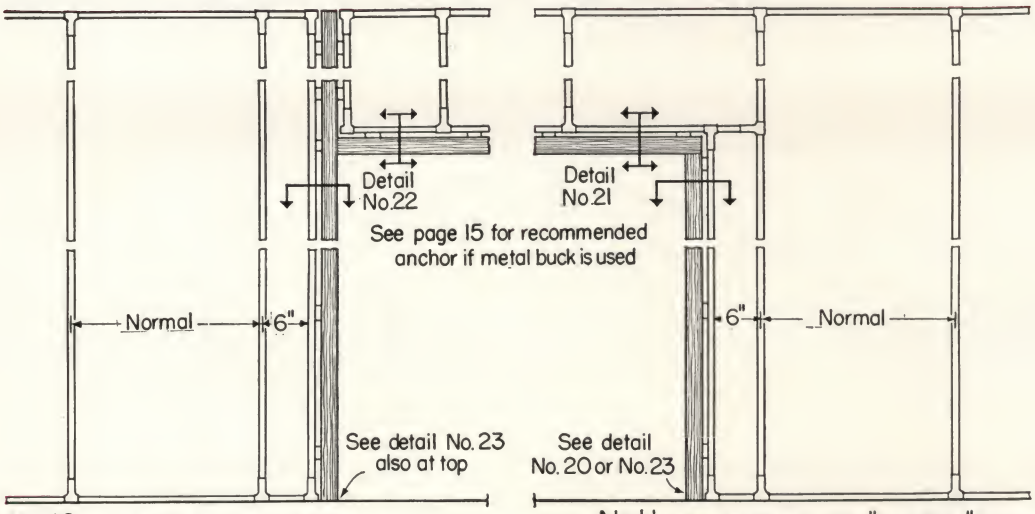
No. 8 - Typical When Two Bar-Z Partitions Join at Right Angles End stud and Bar-X-Lath of cross partition butt and tie to Bar-X-Lath of adjoining partition - Corners are lined with 2"x 2" Cornerite.



No. 9 Typical When Partition Abutts Unfurred Masonry Wall Bar-X-Lath butts to wall - Corners are lined with 3"x3" Cornerite.

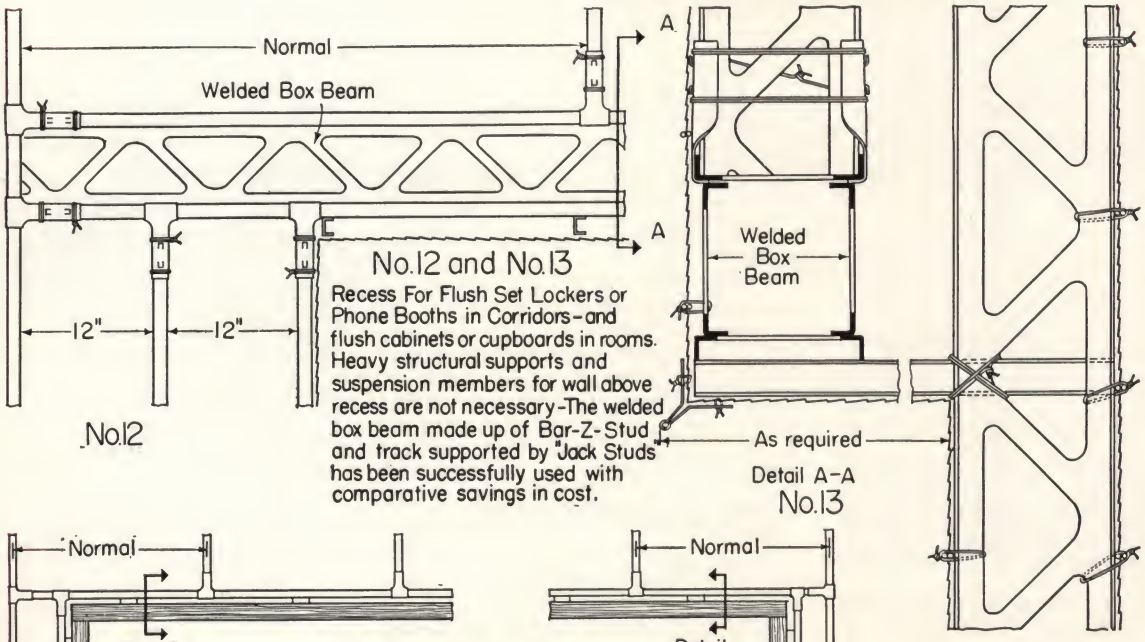
A Steelcrete Product

TYPICAL STUD FRAMING FOR OPENINGS



No. 10 - Door Opening - With wood buck extending from floor to structural slab above

No. 11 - Door Opening - With "Jack Stud" framing for wood or metal buck - This method materially reduces and practically eliminates diagonal cracks in plaster at buck corners.

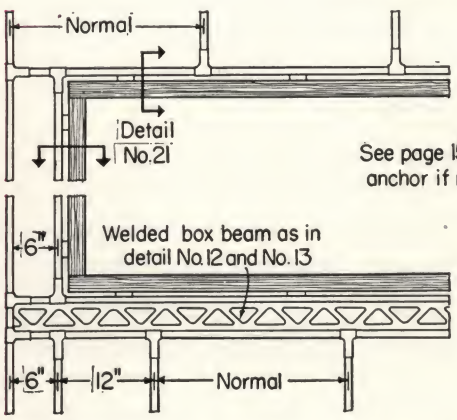


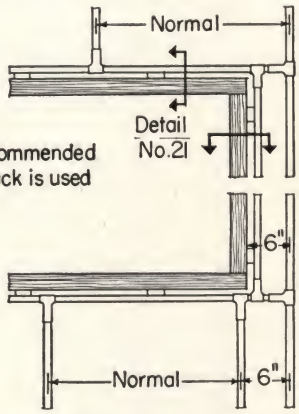
No. 12

No. 12 and No. 13

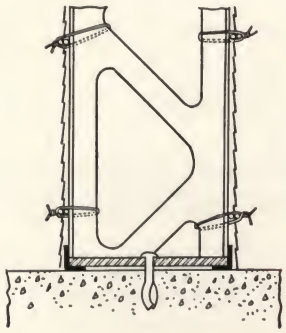
Recess For Flush Set Lockers or Phone Booths in Corridors - and flush cabinets or cupboards in rooms. Heavy structural supports and suspension members for wall above recess are not necessary - The welded box beam made up of Bar-Z-Stud and track supported by "Jack Studs" has been successfully used with comparative savings in cost.

Detail A-A
No. 13





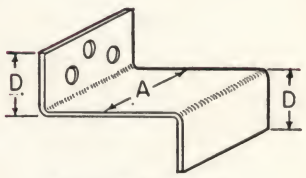
See page 15 for recommended anchor if metal buck is used



No. 14 - Framing & support for large or heavy borrowed light sash or windows - wood or metal buck - also heavy flush cupboards and cabinets, resting above floor line.

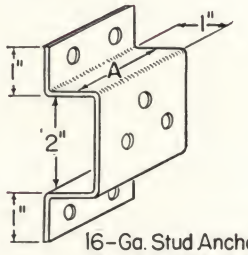
No. 15 - Framing for small or light windows and cabinets, wood or metal buck.

STUD AND FLOOR ANCHORS FOR METAL AND WOOD BUCKS



14-Ga. Z-Type Stud Anchor for Metal Bucks Detail No. 16-17-18

Widths & Clearances for Z Anchors				
Stud Width	Dimensions A	B	C	D
2"	1 13/16"	1/2"	3/8"	1 1/4"
3"	2 13/16"	"	"	"
3 1/4"	3 1/16"	"	"	"
4"	3 13/16"	"	"	"
6 1/8"	5 15/16"	3/4"	"	"

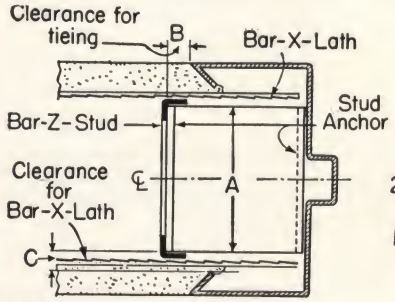


16-Ga. Stud Anchor for Wood Bucks

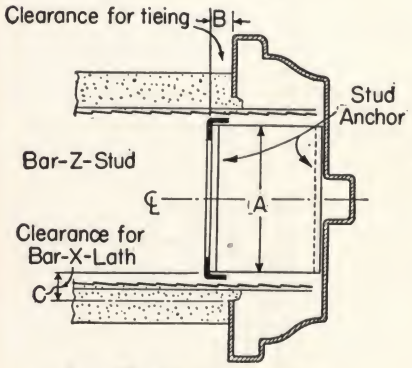
Widths for Wood Buck Anchors	
Stud Width	Dimen. A
2"	1 13/16"
3"	2 13/16"
3 1/4"	3 1/16"
4"	3 13/16"
6 1/8"	5 15/16"

Z-Type Stud Anchors for doors must be furnished by buck contractor—welded to inner face of buck as indicated so that center line of anchor will come on center line of Bar-Z-Partition—Spaced at ¼ points on each side and at ⅓ points in the header. Table of clearances shown must be adhered to. For window bucks follow same detail and provide sufficient anchors top, bottom and sides for firm and secure anchorage.

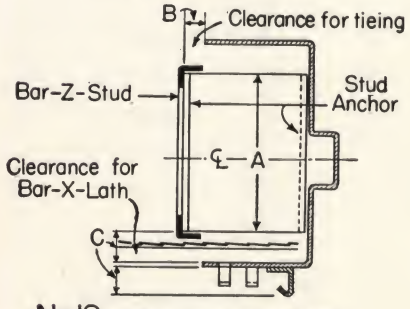
Wood Buck Stud Anchors for doors are to be furnished by the buck contractor or lathing contractor as directed by the Architect. They are carried by us as a stock item. They shall be nailed to the rough buck so as to center on the center line of the Bar-Z-Partition—Spaced at ¼ points below and ⅓ points above header on each side also, at ⅓ points on header. Window Bucks follow same detail with sufficient anchors top, bottom and sides for firm and secure anchorage.



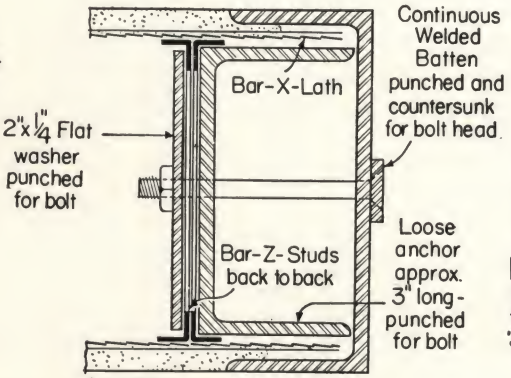
No. 16 – Typical Flush Combination Buck and Trim.



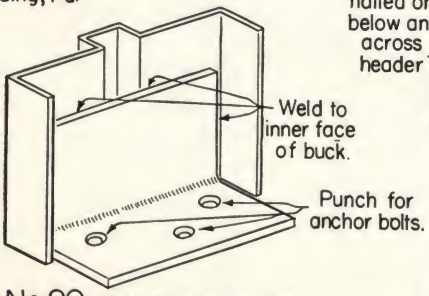
No. 17 – Typical Combination Buck and Moulded Trim



No. 18 – Kalman Type Flush Buck

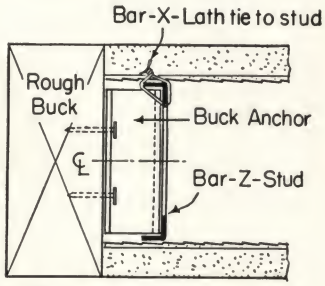


No. 19 Typical Structural Buck As used for carrying fire door can be used with "Jack Stud" framing. Metal trim can be tap-screwed to, if desired. This detail is as developed and specified for Bar-Z-Partition in Transformer Houses by E. M. Gilbert Engineering Corp. of Reading, Pa.

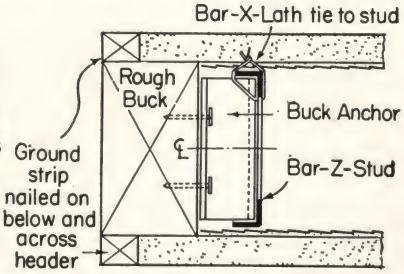


No. 20 – Suggested Detail for Independent Anchoring of Metal Bucks to floor or ceiling.

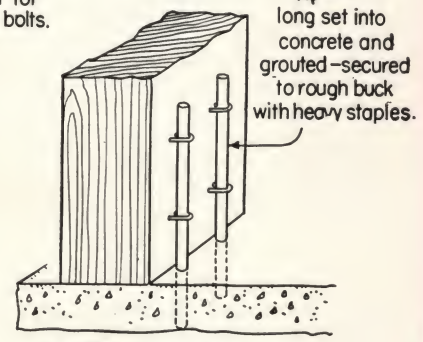
IMPORTANT NOTE
Buck contractor must anchor bucks securely to floor independent of Bar-Z-Partition also to structural slab above where bucks run full height



No. 21 – Details where rough wood buck and header equals width of finished partition – as used with "Jack Stud" framing.



No. 22 – Detail where rough wood buck extends from floor to structural slab above.



No. 23 – Suggested Detail for Independent Anchoring of Wood Bucks to floor or ceiling.

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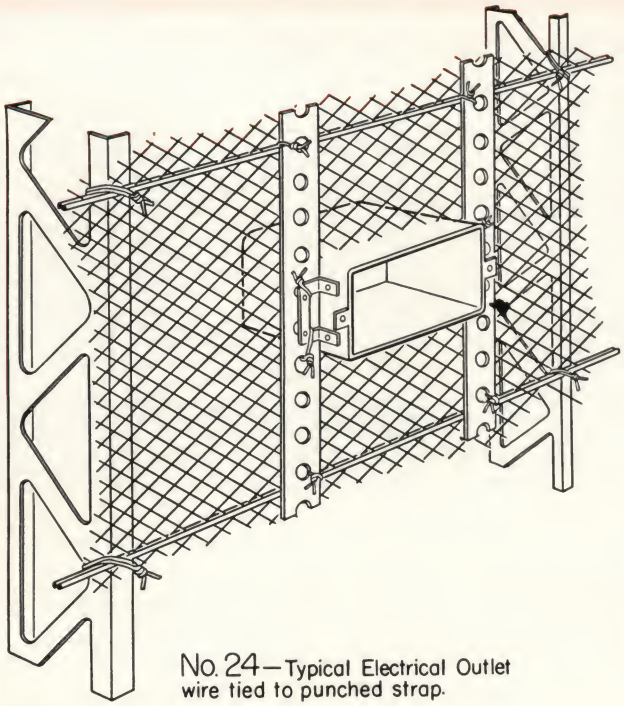
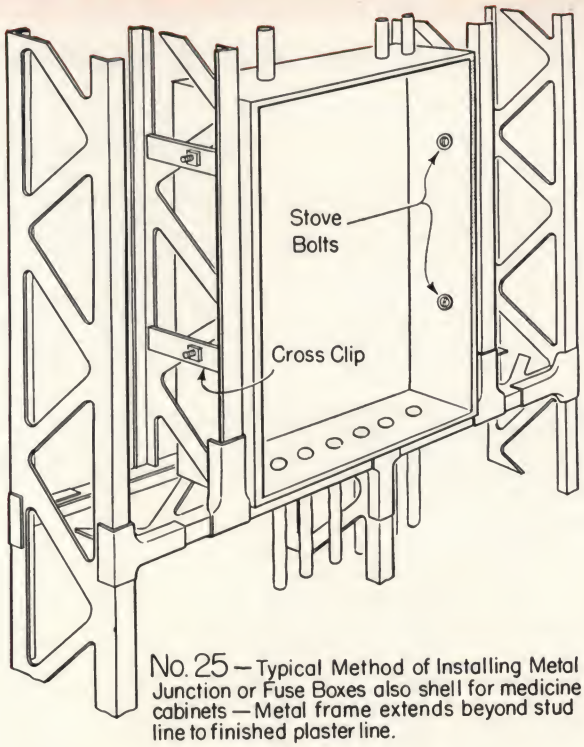
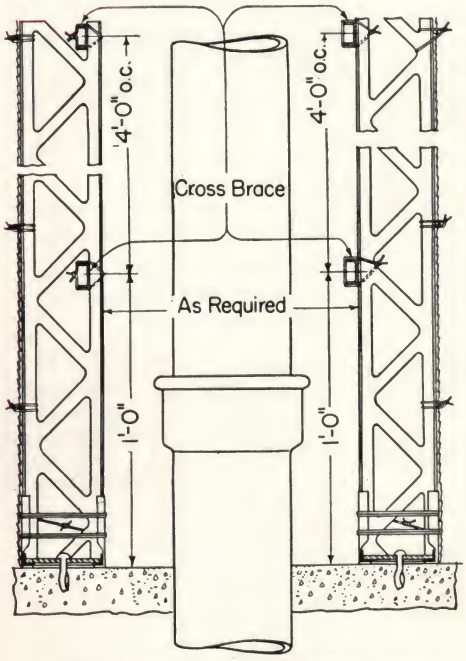


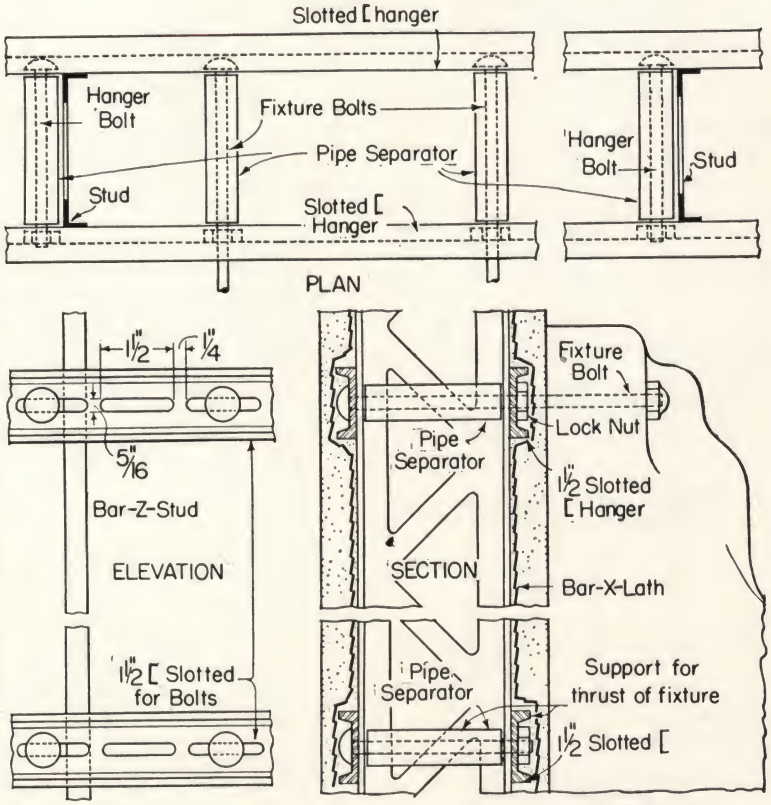
No. 24 — Typical Electrical Outlet wire tied to punched strap.



No. 25 — Typical Method of Installing Metal Junction or Fuse Boxes also shell for medicine cabinets — Metal frame extends beyond stud line to finished plaster line.



No. 26 — Typical - Unbridged Double Partition studs cross braced on unlathed side suitable for concealing pipe stacks and ducts.
This construction affords considerable extra sound insulation and is recommended where this condition is necessary — see page no. 10



No. 27 — Heavy Fixture Hanger and Thrust Brace consists of 1½" H.R. [- punched with slotted holes as shown - ['s are set flush against studs and held in place by carriage bolts passed through ¾" or 1" pipe separators which are cut just "scant" of the stud width to permit drawing tight without "crippling" the stud. Fixture bolts are then set in the same manner to template by the trade requiring same and fixed in place with a lock nut - before the partition is "lathed in" - Thrust brace, if required is set at proper location in manner noted above.

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SELF ALIGNING METAL GROUNDS FOR ATTACHMENT OF METAL OR WOOD TRIM

(Sold only with Bar-Z-System)

This ground made from 26 ga. galvanized Cop-R-Loy Steel is truly "self aligning." It is wire tied directly to Bar-Z-Studs before Bar-X-Lath is applied. The lath is placed over and tied to the perforated flanges. Installation is rapid, practical and economical because "shiming to line is not required."

The double "ground lips" and metal back (see sketch "A") form a stiff rigid base for attaching trim. The space between ground lips may be filled with either plaster or wood filler strip—(see sketches "B" & "C"). The "Fire Resisting" and "Sound Insulating" qualities of Bar-Z-Partitions are retained.

When "Self Aligning" Grounds are used for attaching base trim, the usual stud shoes for track fastening may be eliminated.

Special height grounds can be made for special conditions. Price, based on size and quantity required, will be quoted on request.

Flush Plaster Fill Between Ground Lips

Cleat or Trim is "positioned" and held or braced in place while holes are drilled and screws driven at two or three points, after which intermediate fastenings are made at will. Screws thread into metal back and draw tight.

Holes are drilled thru trim, plaster and back of metal ground in one operation with No. 33 drill. 2 in. No. 8 case hardened wood screw with No. 6 Phillips recessed flat head is recommended.

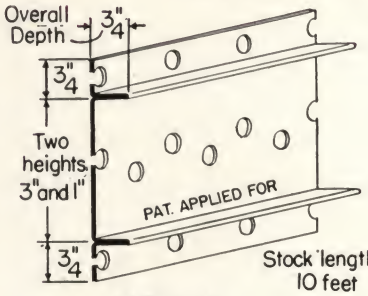
Flush Wood Filler Between Ground Lips

Filler is set—holes drilled thru filler and metal back, in one operation with No. 39 drill, and screw fastened before plastering. No. 6—case hardened wood screw with No. 6 Phillips recessed flat head is recommended.

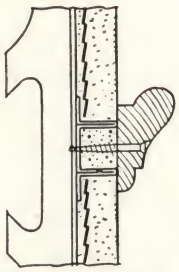
This provides a firm rigid base for either nail or screw fastening of trim. It is quite practical where metal trim is used.

Wood filler strips of proper size are carried as stock items.

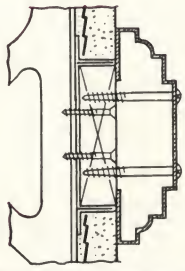
Phillips Recessed Head Screws are recommended because they will drive in flush and countersink without breaking the head; and the driver can't slip and mar the trim. The head on the screws indicated above is only 9/32 in. diameter. The "recess" can be puttied and painted over so as to be practically invisible.



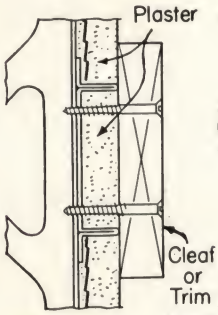
SKETCH-A



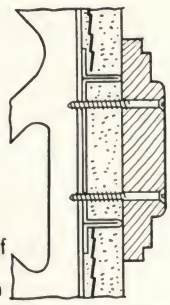
No.28-Wood Picture Mould



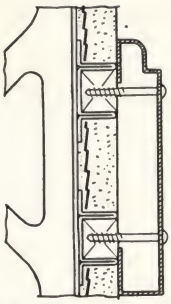
No.29-Metal Chair Rail



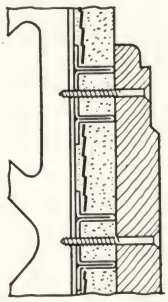
SKETCH-B



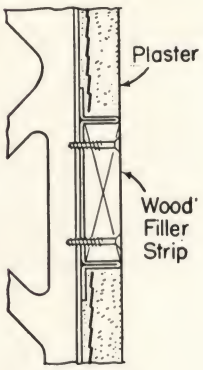
No.30-Wood Chair Rail



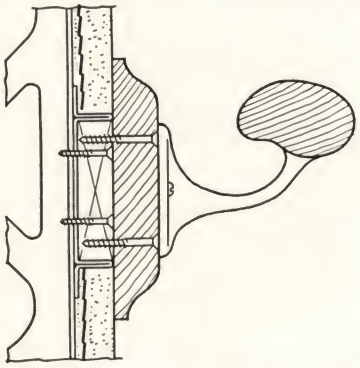
No.31-Metal Base



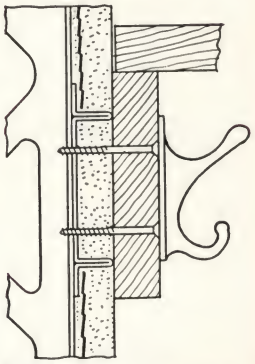
No.32-Wood Base



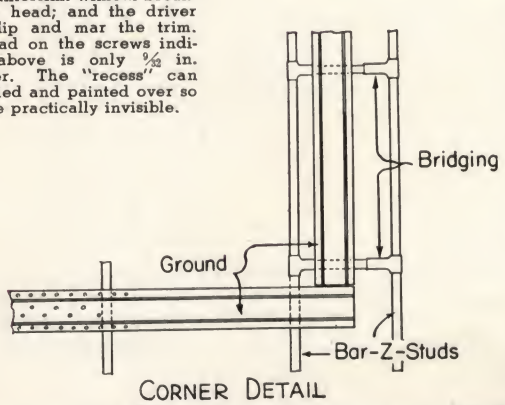
SKETCH-C



No.33-Cleat for Hand Rail

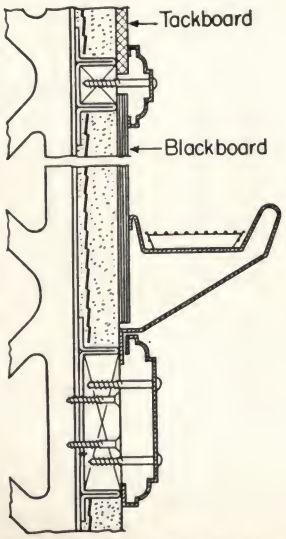


No.34-Cleat for Coat Hooks or Shelf Support

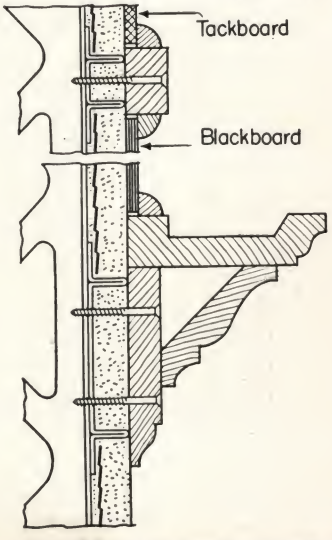


CORNER DETAIL

No.35-Vertical and Horizontal Grounds for Securing Black Boards



No.36-Metal Trim and Chalk Rail for Black Board and Tack Board



No.37-Wood Trim and Chalk Rail for Black Board and Tack Board

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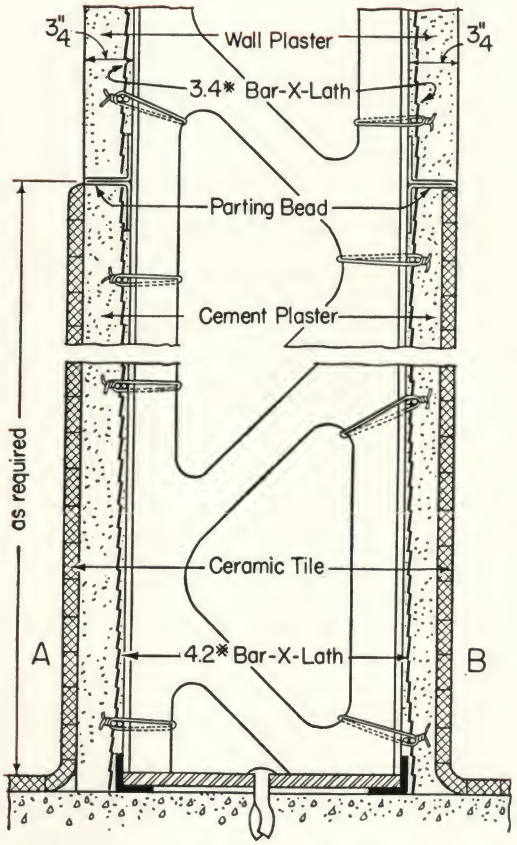
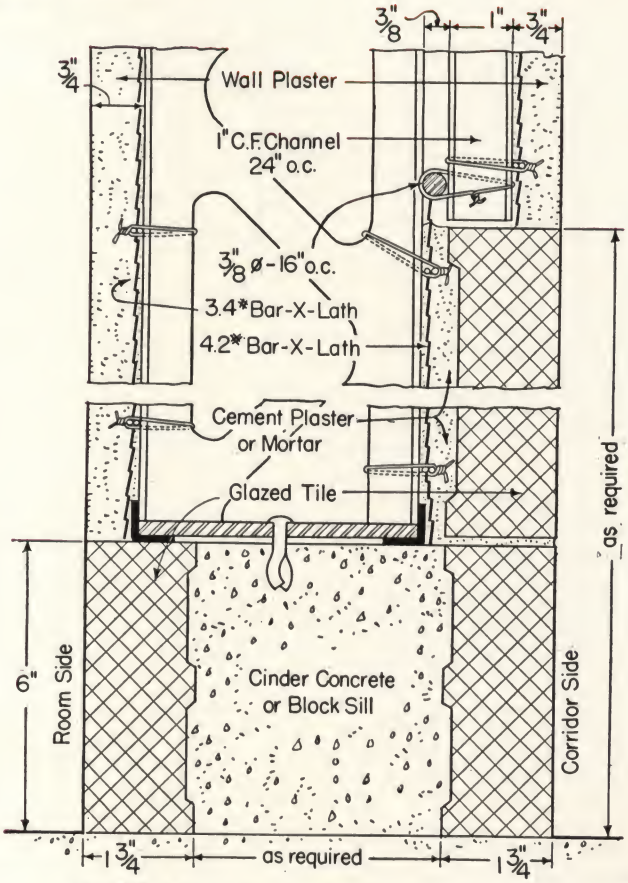
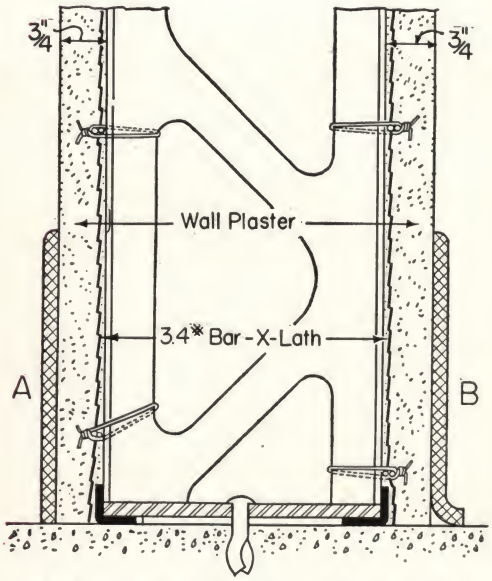
DADOS AND BASES



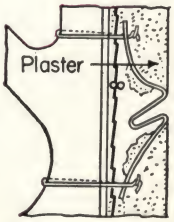
No.38-A and B-Ceramic Tile Dado Cove Base
A- Round cap
B- Flush cap



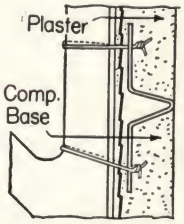
No.39-Typical Corridor Partition-Hospitals, etc. Flush glazed tile base on room side and flush glazed tile dado on corridor side- If rounded or 45° cap is used for dado, furring above dado can be eliminated.



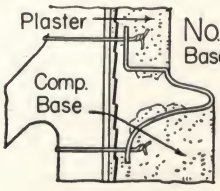
No.40-A and B-Rubber or Asphalt Tile Base Cemented to plaster
A-Straight base
B-Cove base



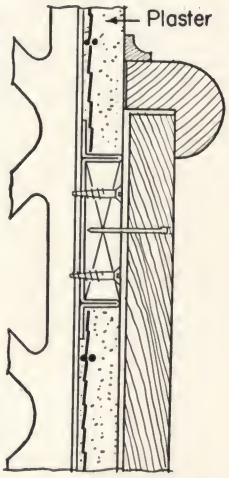
No.41-Concealed Metal Picture Mould-over lath-wire tie to stud and to lath between studs. Shim to line



No.42-Plain Metal Base Screed over lath-wire tie to stud and to lath between studs. Shim to line



No.43-Curve Point Base Screed, for offset cement base-place over lath-wire tie to stud and lath between studs. Shim to line



No.44-Decorative Wood Dado or Paneling-nailed to wood filled-self aligning metal ground (see page 17)

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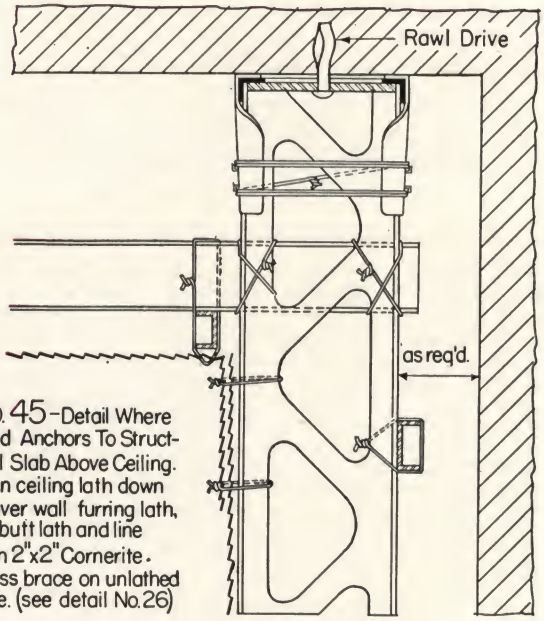
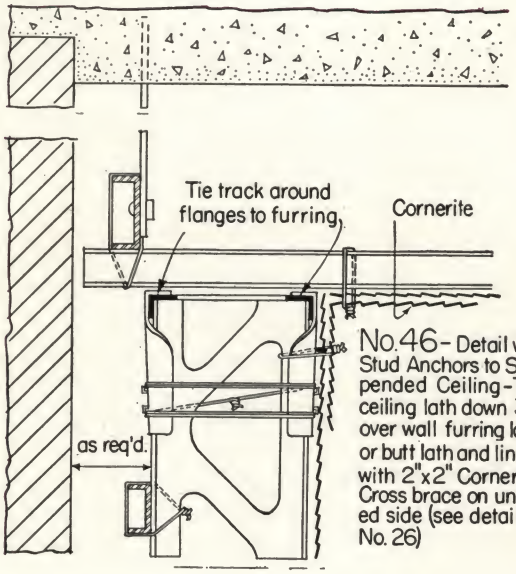
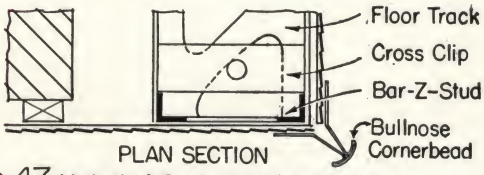
FREE STANDING WALL FURRING



No. 45 - Detail Where Stud Anchors To Structural Slab Above Ceiling. Turn ceiling lath down 3" over wall furring lath, or butt lath and line with 2"x2" Cornerite. Cross brace on unlathed side. (see detail No. 26)



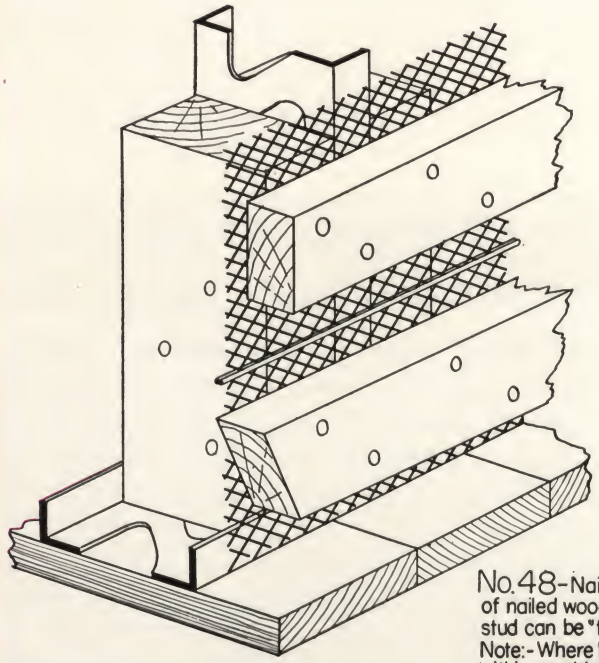
No. 46 - Detail where Stud Anchors to Suspended Ceiling - Turn ceiling lath down 3" over wall furring lath, or butt lath and line with 2"x2" Cornerite. Cross brace on unlathed side (see detail No. 26)



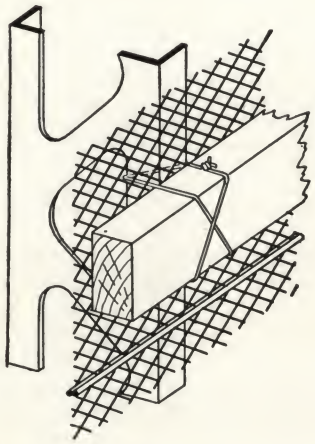
No. 47 - Method of Turning Lath into Window Opening - Fur or stub nail to masonry.

ADVANTAGES OF FREE STANDING WALL FURRING ARE:-

1 - No breaking of waterproofing seal on exterior walls.
2 - Free air circulation to dispel condensation.
3 - Free passage and concealment of vertical and horizontal ducts, pipes and wiring.
4 - True straight wall surfaces regardless of alignment of masonry
5 - Adaptable for concealed radiation under windows.
6 - Rapid installation and no interference with work of masonry trade.



No. 48 - Nailing Blocks - Spiked to studs for attachment of nailed wood grounds - horizontal bridging full width of stud can be "toe-nailed" to blocks where necessary.
Note: - Where local building or fire laws prohibit use of wood within partition - use metal grounds as shown on page 17.



No. 49 - Typical Detail Wood Grounds wire tied over lath to studs and to lath between studs.

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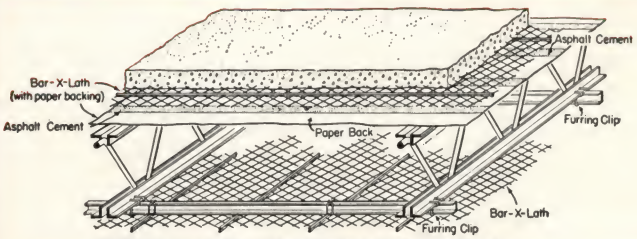
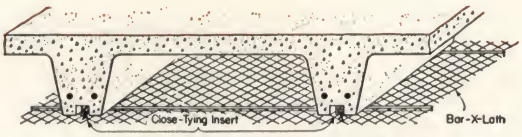
BAR-X-LATH — PAPER BACKED

for Reinforcing Concrete Floors Over Steel Joists or Junior Beams



BAR-X-LATH FOR FLOOR AND CEILING CONSTRUCTION



BAR-X-LATH FOR CLOSE TIED HUNG CEILING

Bar-X-Lath with paper backing is ideal as a form and reinforcement for light concrete floors laid over steel joists or junior beams. Some of the important features are as follows:

1—**Solid Ribs**—each rib consists of two No. 11 cold drawn wires—welded to each other thru the meshes of the lath—to form a "stiff beam"—ribs are spaced 7 in. o.c. and have an effective cross-sectional area of .0391 square inch of steel per foot of width, **exclusive of the lath meshes.** This is standard for all weights of Bar-X-Lath.

2—**True Reinforcement**—the ribs lay in substantially the same plane as the lath meshes—and are therefore in the position, near the bottom of the slab, where they will be most effective as a reinforcement. **Bar-X-Ribs actually reinforce the slab** and do not create a plane of weakness above the rib as do the hollow rib laths.

3—**Paper Back**—either Kraft paper or waterproof paper, as may be wanted, is attached to the lath meshes by two—1 inch wide strips of asphalt cement spaced equidistant between the ribs longitudinally of the sheet. This feature permits the paper back to "give slightly" between the "asphalt strips" when the slab is poured, and thus allow the wet concrete to penetrate the lath keys between the "asphalt strips" and form a "moulded bond" around and under the solid reinforcing ribs.

The paper back retains the moisture in the slab until "set"; aids in the "normal curing" of the concrete—and prevents "Honeycombing" on the under side of the slab due to dripping.

4—**On the job**—damage to the solid ribs cannot occur in handling—even when run over by a loaded "buggy." The solid ribs cannot be crushed, as in hollow rib laths, and nesting difficulties are eliminated. The extra stiffness of Bar-X-Lath minimizes sagging between joists and thereby saves wastage of concrete. Bar-X-Lath lays flat and level, stretching to flatten "kinks" is not required—thus, **there is no strain imposed on end joists due to stretching.** Bar-X-Lath handles fast and can be "clipped"—"tied" or "pegged" in place, depending on the type of joist used.

Side laps, approximately 1 inch wide, should be tied once between joists—End laps, approximately 6 inches long should be staggered in alternate rows of lath and tied at both ends of the lap on each rib. This provides continuity and prevents hinging. Such laps may come at any point between joists.

5—**Safe Live Loads**—the unusual strength of light floor slabs reinforced with Bar-X-Lath is indicated by the following table. This table is as calculated by Burtis Brown, C.E., Structural Engineer, 45 Franklin St., Boston, Mass., using "The Exact Formula." In these calculations the slab is considered as continuous over 3 or more spans. The concrete is 1-2-4 mix having an ultimate strength in compression of 2000 lbs. per square inch. The working stress for steel is 20,000 lbs. per square inch as in cold drawn wire.

The reinforcing value of the lath mesh is not included in the calculations. It is significant that in the 1½ inch slab the concrete is "stressed" to only about 500 lbs. per square inch. This becomes progressively less with the increased thickness so that in the 3 inch slab, the "stress" is well under 300 lbs. per square inch. Thus—all working stresses are well within safe limits and provide an ample margin or factor of safety.

Concrete Slabs Over Steel Joists
Reinforced with Bar-X-Lath

Table of Safe Live Loads in Pounds per Square Foot
Uniformly Distributed—Weight of Slab Deducted

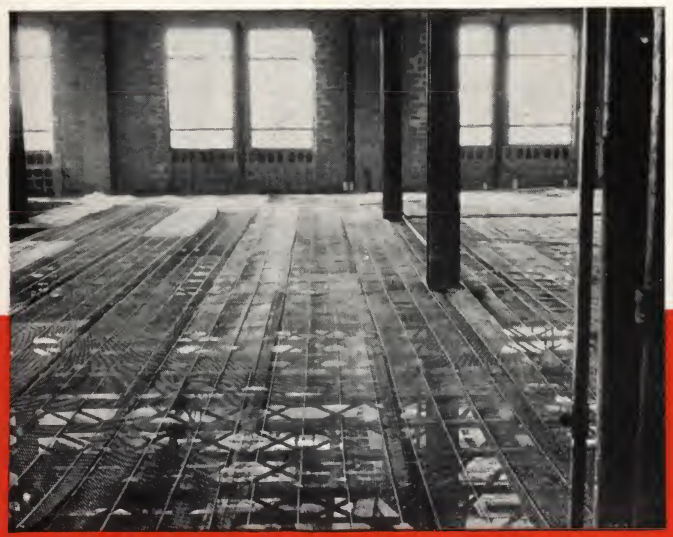
$$M=\frac{W1^2}{12}$$

Span of Slab in inches	Thickness of Slab in Inches				Weight of Bar-X-Lath Recommended
	1½ in.	2 in.	2½ in.	3 in.	
16	433 lb.	636 lb.	835 lb.	1022 lb.	3.4 lb. per sq. yd.
20	269 lb.	398 lb.	523 lb.	640 lb.	3.4 lb. per sq. yd.
24	181 lb.	269 lb.	354 lb.	433 lb.	4.2 lb. per sq. yd.
27	139 lb.	207 lb.	273 lb.	334 lb.	4.2 lb. per sq. yd.
30	109 lb.	163 lb.	215 lb.	264 lb.	4.6 lb. per sq. yd.

For—$M=\frac{W1^2}{10}$ Use 5/6 of above values.

For—$M=\frac{W1^2}{8}$ Use 2/3 of above values.

See note at top of next page.



Bar-X-Lath for Floor Construction, Top View

Bar-X-Lath for Ceiling Construction, Bottom View

Note: The recommendations for weight of Bar-X-Lath for various spans in safe live load table are based on average conditions of usage. However, due to special or unusual means afforded by some types of steel joist for securing the lath to the joists, it is possible to use the 3.4 lb. Bar-X-Lath for all spans shown in table on Page 20; and under these conditions, the joist manufacturers recommendations should govern.

These safe live loadings are based on the reinforcing value of the **solid ribs** of Bar-X-Lath **only,** and this is the same for all weights of Bar-X-Lath.

BAR-X-LATH FOR CEILINGS

Bar-X-Lath is particularly suited for use with wide spaced furring or for "close tied" attachment direct to the underside of Bar-Joist—or "Ribbed Concrete" Construction.

No Dust Streaking—The solid ribs lay in substantially the same plane as the lath keys, are completely imbedded in plaster—and permit uniform thickness and keying of plaster as in diamond mesh lath. This prevents the "dust streaking" which frequently appears in jobs where flat rib or hollow rib lath has been used and in which the pattern of the rib, because of non-uniform plaster thickness, shows thru the finished plaster ceiling in the same manner as in wood lathed jobs.

Economy plus Quality—The extra rigidity and strength of Bar-X-Lath, makes practical the use of wider than normal spaced furring; prevents sagging while the plaster is wet, and eliminates "shaking off" of plaster from vibration during application. The ribs act as a "screed" to insure proper thickness of "scratch coat." Many building codes do not permit attachment of lath directly to the underside of Bar Joist Construction, but require channel furring for fireproofing; therefore, the wider spacing of furring made possible by Bar-X-Lath will reduce the "extra cost of furring" proportionately.

The following table shows weights of Bar-X-Lath recommended for ceilings for various spacings of furring or joists.

Table of Bar-X-Lath for Ceilings

Span of Joists or Spacing of Furring in inches	Weight of BAR-X-LATH Recommended
16	3.4 lb. per sq. yd.
19	3.4 lb. per sq. yd.
24	4.2 lb. per sq. yd.
30	4.6 lb. per sq. yd.

WHY IT IS ESSENTIAL TO USE BAR-X-LATH FOR BAR-Z-PARTITIONS

The question is sometimes raised as to why we advocate the use of Bar-X-Lath on Bar-Z-Partitions and discourage the use of other of our laths such as ⅜ inch hollow rib lath—or regular diamond lath.

The following we offer in explanation:

(1)—Economy and comparative costs with block and masonry type partition indicate a 24 inch spacing of studs.

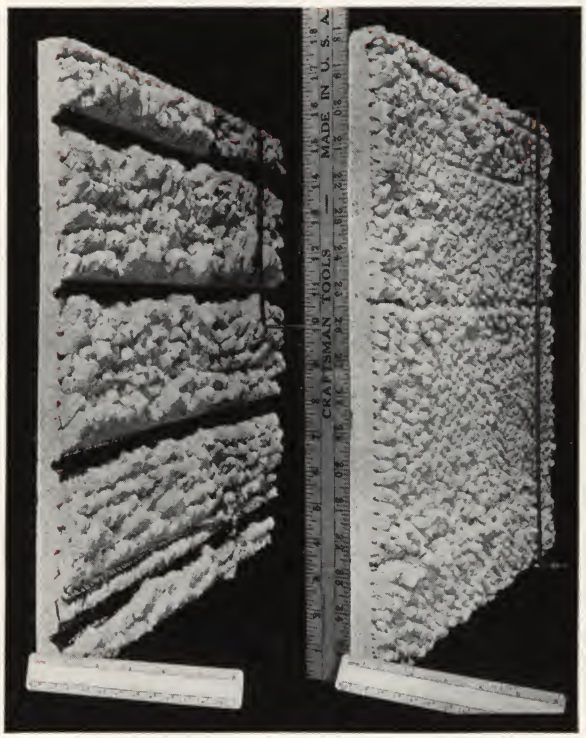
(2)—Bar-X-Lath is designed to span a 24 inch stud spacing and does so in an entirely satisfactory manner as evidenced by tests and hundreds of successful installations. The double solid rib has sufficient strength and rigidity to carry that span safely, and act as a bridging between studs. It also allows a full uniform coverage of plaster over the lath which is essential for ultimate strength resistance to sound penetration, and resistance to fire penetration.

(3)—The increased costs of studs, tie wire, labor of placing studs and tieing on lath for reduced spacing as compared with 24 inch spacing is approximately 48% for 16 inch spacing and 98% for 12 inch spacing which will reflect themselves in the finished cost of partition by increases of approximately 10% for 16 inch spacing and 20% for 12 inch spacing. Of course the cost of lath itself and plastering would be approximately the same regardless of spacing.

(4)—The accompanying photographic illustration will indicate the relative structural merits of Bar-X-Lath and ⅜ inch hollow rib lath. Note the uniform thickness of plaster and key on the Bar-X-panel and the opposite condition in ⅜ inch rib panel. Note also the plane of weakness created over each hollow rib where the plaster is only ⅜ inch thick and which will have a tendency to produce cracks, particularly where vibration is present in a structure.

Both of these panels were cut with a rotary saw from larger finished panels. Their weights are nearly identical, altho ⅜ inch rib lath panel is slightly heavier due to wastage at key points.

Obviously ⅜ inch hollow rib lath is not suited to this type of construction from the viewpoint of structural value, sound insulation or fire retardance. Sheet laths with a multiplicity of "humps" or protrusions on the surface which tend to reduce plaster thickness at these points would fall in the same class as hollow rib laths.



⅜ in. Rib Lath Bar-X-Lath

(5)—Diamond Lath weighing 3.4 lbs. per square yard is a satisfactory plaster base, provided stud spacing is reduced to 12 in. This however will increase the finished cost of partitions approximately as noted above.

ARCHITECTS SPECIFICATIONS

Foreword for the Architect:—

The following specification is offered as a complete exposition and reference from which the Architect may "lift" for use in his own specification such data and detail as in his opinion are pertinent and applicable to a specific project.

In the interest of co-ordinating the work of the several trades whose work may "tie in" with the construction of Bar-Z-Partition or Free Standing Wall Furring, it is suggested that the notes, as applicable to the several trades, noted below be included in the specifications or contract for such respective trades as may be pertinent to the project in hand.

It has been our experience that adherence to the suggestions offered herein will facilitate the work of construction and insure a satisfactory installation.

LATHING CONTRACTORS SPECIFICATIONS

Plastering Base for Non-Bearing Partition and Free Standing Wall Furring

A—DESCRIPTION

1—Wherever plastered non-bearing partition (and) (free standing wall furring) is indicated on the plans, or in the specifications, The Steelcrete Bar-Z-System, consisting of a combination of Bar-Z-Studs and Bar-X reinforced diamond mesh lath, as manufactured by The Consolidated Expanded Metal Cos., shall be used as a base for plaster.

(a) A single line of Studs, lathed on both sides will be indicated as type "A" partition.

(b) A single line of Studs, lathed on one side only will be indicated as type "B" partition—or as "Free Standing Furring," depending on where it is used.

(c) Two parallel lines of Studs lathed across the outer flanges of each line to form a hollow partition, unbridged between the two lines of studs will be indicated as type "C" partition.

2—Erection and construction of Bar-Z-Partition (and free standing wall furring) shall be in accordance with recommended details of construction as described in the manufacturers catalog (No.—) or as specifically described or modified herein or indicated on the plans by the Architect.

B—MATERIALS

1—Bar-Z-Studs, shall be 16 gauge steel channels, cold formed and punched along the entire length of the web between flanges, with triangular openings having alternately opposed apices, to form an open diagonal truss bracing. Studs shall be asphaltum coated, and shall have a width of 2", *3", 3¼", 4" or 6⅛" as may be indicated on the plans or elsewhere herein.

2—Bar-Z-Track for floor and ceiling attachment shall be of the same general character as Bar-Z-Stud, but sufficiently wider than the stud so as to receive the stud and make a "neat fit."

**Architect Note:*

3" Stud is made on special order only and is not carried as a stock item.
All Bar-Z-Studs and track can be furnished on special order, made from Cop-R-Loy rust-resisting steel at slight additional cost.

3—Bar-X-Lath shall be asphaltum coated, expanded steel mesh having diamond shaped keys, or plaster bonds; each sheet of which shall be reinforced with four pairs of No. 11 gauge wire rods, spaced 7" on centers, starting 3" in from the longitudinal edges of each sheet; the four rods on the face of each sheet to be placed directly in line with the four rods on the opposite side of each sheet to form four pairs; the members of each pair shall extend longitudinally the entire length of each sheet and shall be securely welded one to the other, thru the meshes, along the entire length of each pair.

4—Bar-X-Lath shall weigh 3.4 lbs., 4.2 lbs. or 4.6 lbs. per square yard inclusive of the reinforcement. For partitions (and) (wall furring) generally, the 3.4 lb. weight may be used except where special or unusual conditions of service require the heavier weights to be used as noted on the plans or indicated elsewhere herein. Where Ceramic or Glazed tile facing is to be applied to the partition (and) (wall furring) the heavier weights, as indicated on detail drawings, shall be used.

Architect Note:

Bar-X-Lath can be furnished in Cop-R-Loy rust-resisting steel at slight additional cost.

5—Tie Wire shall be 18 gauge Cop-R-Loy steel, dead soft, zinc coated—of certified Steelcrete quality.

6—Accessories wherever indicated as being required, such as Corner Beads, Base Beads (plain or curve point), Concealed Picture Mould, Parting Beads, or Self-aligning Metal Grounds for attachment of trim, shall be made of 26 gauge galvanized Cop-R-Loy steel.

Architect Note:

All the above items of our own manufacture are furnished standard in Cop-R-Loy rust-resisting steel at no extra cost.

C—CONSTRUCTION AND ERECTION

1—The lathing contractor shall inform himself as to the work of other trades which it is intended shall come within and be concealed within the Bar-Z-Partitions (and) (wall furring) and he shall co-ordinate his work with that of the other trades so that all work may proceed in an orderly manner. Charges for "extras" caused by failure to observe this requirement will not be honored.

2—Where practical to do so, Bar-Z-Track and Studs may be set before work of other trades which is to be concealed within the Bar-Z-Partition (and) (wall furring) is installed. However, lath shall not be applied so as to "close in" the Bar-Z-Partition (and) (wall furring) without permission of the (Architect's representative) (General Contractor's Superintendent) who will determine whether the work to be concealed is satisfactorily completed and ready for "closing in."

3—Bar-Z-Track shall be placed true to line and securely attached to both floor and ceiling construction, in the manner described herein or as shown in detail drawings—or as may be otherwise approved by the Architect. Such fastenings shall be made at both ends of every piece of track; intermediate fastenings shall be spaced, depending on the type of fastening used, as authorized by the Architect, or called for herein or as indicated on the drawings.

Architect Note:

Conventional details of satisfactory methods of fastening are shown on page 13.

4—Bar-Z-Studs shall be set plumb and securely fastened to both top and bottom track members by means of Bar-Z-Shoes. Two strands of 18 gauge galvanized tie wire shall be passed twice completely around the shoes, drawn tight and tied with a twist tie.

(a) Where "self-aligning grounds" for base (as shown on page 17) are used, Bar-Z-Shoes may be eliminated and such grounds shall be tied directly to the stud, top and bottom of the ground where it crosses each stud.

(b) Clearance up to 1½ inch between top of stud and top track is permissible.

(c) Maximum spacing of studs shall be governed by size of stud and permissible height for same as shown in the following table—

Spacing For Heights Shown

Stud Width	24" O.C.	19" O.C.	16" O.C.
2"	10 feet	15 feet	18 feet
3"	12 feet	17 feet	20 feet
3¼"	13 feet	18 feet	21 feet
4"	16 feet	20 feet	22 feet
6⅛"	20 feet	24 feet	26 feet

5—Bar-X-Lath shall be placed with the reinforcement running horizontally. It shall be wire tied to the studs. A tie shall be made to the stud at each rib where it crosses the stud; also at each rib and between ribs where vertical laps occur at a stud. Where vertical laps occur between studs, both ends of the lap shall be tied on each rib, and one tie made between ribs. Vertical laps shall be approximately 2" wide and shall be broken or staggered in alternate rows of lath to avoid continuity. Horizontal laps shall be approximately ½" deep and shall be tied to each stud, and once between studs along the line of the lap. The ends of all ties shall be turned back into the lath.

6—Vertical Corners shall be formed as described herein or as shown on detail drawings.

(a) Outside corners shall be formed from an assembly of 3 studs placed to form 3 sides of a hollow box, with the flanges of the studs facing outwardly therefrom. Bar-X-Lath shall extend on both sides and butt at the "nose" of the corner, and shall be securely tied on each flange of each stud forming the corner. Corner Bead or other "nosing" as indicated elsewhere or shown in detail drawings shall be applied to all vertical outside corners.

(b) Inside corners shall have Bar-X-Lath butted into the corner and lined with 2"x2" Cornerite. All shall be securely tied to adjacent stud flanges.

(c) Where a cross partition abuts another line of Bar-Z-Partition (and) (wall furring), the end stud of the cross partition shall be securely tied to the Bar-X-Lath of the partition which it abuts; the resulting inside corners shall be lathed as described for (b) above.

(d) Where a Bar-Z-Partition abuts an unfurred exterior or masonry wall, the end stud of the partition shall be placed "just clear" of the

wall, Bar-X-Lath shall butt to the wall and the resulting inside corners shall be lined with 3"x3" Cornerite. All to be securely tied to the end stud and one "leg" of the cornerite nailed or otherwise secured to the masonry wall.

Architect Note:
For corner assembly and construction, see details 7-8-9, page 13.

7—Stud Framing for openings to receive bucks for various conditions, such as doors, windows, cabinets, cupboards, etc. shall be as described herein—or as shown on the drawings. Vertical Studs and headers and under-framing shall be securely attached to buck anchors provided and attached to bucks by others.

(a) Bar-X-Lath shall be securely attached to all stud framing members around openings.

(b) Where combination metal buck and trim are indicated, Bar-X-Lath shall enter the space behind the trim to approximately the full depth of the trim.

(c) Where wood bucks are indicated, Bar-X-Lath shall butt to the buck but shall not be nailed or otherwise fastened to it.

Architect Note:
Details 10 to 15 inclusive on page 14 and No. 25 on page 16 illustrate typical methods of framing openings.

8—Metal Corner Beads, Screeds, Base Beads, Concealed Picture Mould etc. wherever indicated on drawings or called for herein, shall be placed over the Bar-X-Lath shimmed to line and be securely wired to both studs and lath.

Architect Note:
See details 41, 42 and 43 page 18. Also, Detail 7 page 13 and Detail 13 page 14.

9—Self-Aligning Metal Grounds either wood or plaster-filled for attachment of trim wherever called for herein or indicated on the drawings shall be wired directly to the studs top and bottom of the ground at each stud. Bar-X-Lath shall break above and below each ground, shall overlap the vertical flanges of the ground and be securely attached thereto.

Architect Note:
See details No. 28 to No. 37 inclusive, page 17, also, No. 44 page 18.

10—All Free-Standing Furring or Partitions indicated as types "B" or "C" shall be cross-braced on the unlathed sides of the studs. Cross bracing shall be ¾" or 1" cold formed channels, placed horizontally across the stud flanges—or threaded thru the openings in the studs and securely tied thereto. Cross-bracing shall be spaced approximately 12" up from the floor and 12" down from the ceiling with intermediate bracing approximately 4 feet on centers.

Architect Note:
See detail No. 26 page 16 and No. 45 and 46 on page 19.

11—Parting Beads where required for the separation of different types of plaster shall, as directed by the Architect, be furnished by the contractor requiring same, for installation by the lathing contractor.

SPECIFICATIONS FOR RELATED WORK

Notes to Be Included in Specifications and Contracts for Co-operating Trades to Facilitate and Insure Co-ordination of Work

1—PLASTERING CONTRACTOR

(a) Wall plaster as elsewhere provided for herein shall be applied to all Bar-Z-System Non-Bearing Partitions (and) (Free Standing Wall Furring) to a thickness of ¾" beyond the face of the stud flange wherever plastering is indicated.

Note:
Type "A" partitions have plaster on both sides.
Type "B" partitions and Free Standing furring have plaster on one side only.
Type "C" partitions have plaster on one side of each of 2 lines of stud.

(b) This contractor (shall) (shall not) apply cement base coats for Ceramic or Glazed tile facing (and) (Flush or offset cement bases).

(c) If this contractor applies cement base coats for tile or cement bases, he shall furnish the lathing contractor with suitable parting beads for the separation of the different types of plaster; this does not include common metal screeds or curved point base beads which are furnished by the lather under his contract.

2—METAL BUCK MANUFACTURER—AND—METAL BUCK ERECTION CONTRACTOR

(a) This manufacturer shall supply Z-type anchors welded to the inner face of all metal bucks or combination metal buck and trim units, centered to line with the center line of Bar-Z-System partitions wherever such bucks are to be used in connection with the Bar-Z-System. Dimensions, Clearances and spacing for Z-anchors as shown on detail drawings (or) (as given on page 15 of Bar-Z-System Catalog issued by the Consolidated Expanded Metal Cos.) shall be adhered to.

(b) Door Bucks shall have suitable anchors for securing same to floor (and ceiling) welded to the inner faces of the bucks.

(c) Door Bucks shall be securely anchored to floor (and ceiling) and braced against displacement, prior to the erection of, and independent of the Bar-Z-Partitions.

(d) Window Bucks and Bucks for other openings, resting above the floor line shall be set in stud framing for such openings as provided by the lathing contractor. These two contractors shall co-operate in this work.

3—PLUMBING CONTRACTOR

This contractor shall inform himself as to which, if any of his work rises or runs within, or penetrates Bar-Z-System Partitions (and) (wall furring) and he shall co-operate with the lathing contractor so that the latter's work shall not be delayed.

(a) Where hangers and thrust bracing are required for the support of heavy fixtures, they shall be furnished and installed by this contractor before partitions are lathed or closed in. Hangers shall be as shown on detail drawings or as approved by the Architect.

Architect Note:
Suitable hanger and thrust brace is shown in detail No. 27—page 16.

4—HEATING AND VENTILATING CONTRACTOR

This Contractor shall inform himself as to which, if any of his work rises or runs within, or penetrates Bar-Z-System Partition (and) (wall furring) and he shall co-operate with the Lathing contractor so that the latter's work shall not be delayed.

5—ELECTRICAL CONTRACTOR

This contractor shall inform himself as to which, if any of his work rises or runs within, or penetrates Bar-Z-System Partition (and) (wall furring) and he shall co-operate with the Lathing contractor so that the latter's work shall not be delayed.

6—CERAMIC TILE OR GLAZED TILE CONTRACTOR

(a) This contractor (shall) (shall not) apply the necessary cement base coats, to Bar-Z-System Partition (and) (wall furring), to receive his tile work.

(b) If this contractor applies cement base coats to receive his tile work, he shall furnish the lathing contractor with suitable parting beads for the separation of the different types of plaster. The lathing contractor will install such parting beads.

(c) This contractor shall provide suitable covering for his work so as to protect it while other trades are working around it.

7—CARPENTER CONTRACTOR

(a) Wherever wood bucks are indicated to come in Bar-Z-System Partition (and) (Free Standing Wall Furring) this contractor shall supply and attach to such bucks 16 gauge steel stud anchors as shown on (detail drawing) (page 15 of Consolidated Expanded Metal Cos. Bar-Z-System Catalog). They shall be nailed to rough buck so as to center on the center line of the partitions. Spaced at ¼ points below and ¼ points above header on each side of door bucks; also, at 3rd points on the header. Window bucks follow same detail with sufficient anchors top, bottom, and sides for firm and secure anchorage.

(b) All door bucks shall be securely anchored in an approved manner to floor (and ceiling) independently of the Bar-Z-Partitions (and) (wall furring).

(c) Where self-aligning metal grounds are indicated as a base for the attachment of trim or other carpentry work, such grounds shall be supplied and installed by the lathing contractor. These grounds may be either wood or plaster filled (as indicated in detail drawings), depending on the type of trim or method of fastening to be used.

(d) When self-aligning metal grounds are plaster filled, attachment of trim shall be by means of 2 inch No. 8 case hardened wood screw having a No. 6 Phillips recessed flat head. The trim or cleat shall be "positioned" and held or braced in place while holes are drilled and and screws driven at two or three points, after which intermediate fastenings are made at will. Screws thread into metal ground and draw tight. Holes are to be drilled with a No. 33 drill thru trim, plaster and back of metal ground in one operation.

(e) When self aligning metal grounds are to be wood filled, for either nail or screw fastening of trim, flush wood filler strips of proper size shall be furnished and installed by the carpenter before plastering is started. Holes shall be drilled with a No. 39 drill thru filler and metal back of ground in one operation and filler fastened to metal ground with 1¼ inch No. 6 case hardened wood screws having No. 6 Phillips recessed flat head.

Architect Note:
Details for self aligning grounds are shown on page 17.

(f) Wood nailing or spiking blocks where indicated shall be furnished and attached to Bar-Z-Studs by the carpenter before lathing is started.

Architect Note:
See detail No. 38, page 19.

(g) Nailed-on wood grounds shall be placed over the lath and nailed to spiking blocks at each stud. Ties shall be made to lath between studs if required.

OTHER STEELCRETE PRODUCTS

EXPANDED METAL REINFORCING

Steelcrete Reinforcing—3″ meshes for reinforcing concrete floors, walls, sewers, etc. Catalog and Slab Tables on request.

2¼″ meshes for Gunite; for overcoating, linings, and stucco.

6″ meshes: Highway reinforcing, uniform and heavy edged fabric. Data and prices on request.

Bank Vault Mesh—A heavy mat entanglement embedded in concrete walls, floor and roof. Most physical protection, best insurance rating. Catalog and detailed data on request.

INDUSTRIAL MESH

Safe-T Mesh—Expanded Metal with smooth edge strands, guaranteed without burrs or sharp edges. Also standardized framing units for partitions and window guards.

Flattened Mesh—Safe-T Mesh flattened suitable for shelves, trays, display racks, bins and ventilator guards.

Walk Way Mesh—A rugged, non-slip tread for cat walks, runways, platforms and flooring.

METAL LATH AND ACCESSORIES

A complete line for every purpose, including: Corner Beads, Cornerite, Channels, Tie Wire and Stub Nails, also Combination Lath (paper back). All types and weights.

WELDED WIRE FABRIC

A complete line for reinforcing concrete. All sizes and weights in rolls or flat sheets, plain or galvanized.

FABRICATED PRODUCTS

Partitions, Window Guards, Radiator Guards, Shelving, Display and Storage Racks, etc.

STEELCRETE FENCE

Industrial and Property type, unusually strong, non-climbable, low upkeep. Catalog on request.

Steelcrete

THE CONSOLIDATED EXPANDED METAL CO'S.

WHEELING, WEST VIRGINIA

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SECTION 9

CONTINUED ⟶

THE FINISHING LIME ASSOCIATION OF OHIO

HEADQUARTERS OFFICE
601-2-3 Home Bank Building, TOLEDO, OHIO

MEMBERS

THE KELLEY ISLAND LIME & TRANSPORT CO.
NATIONAL MORTAR & SUPPLY CO.
THE NATIONAL LIME & STONE CO.
THE NATIONAL GYPSUM CO.
THE OHIO HYDRATE & SUPPLY CO.
THE WOODVILLE LIME PRODUCTS CO.
THE GIBSONBURG LIME PRODUCTS CO.
THE STANDARD LIME & STONE CO.

SPECIFICATIONS FOR INTERIOR PLASTER, USING FINISHING HYDRATED LIME

For the purpose of aiding you in obtaining a perfect, everlasting job of plaster and aiding in the solution of your plastering problems, we are submitting these specifications on the use of Finishing Hydrated Lime. These specifications are based on average conditions and will serve as a guide in carrying out your work. The proportions of these specifications are based on the Finishing Limes of Ohio, which have physical characteristics peculiar to limestone found only in a small area in northwestern Ohio.

Materials

Finishing Hydrated Lime—All lime for finish coats shall be Dolomitic Finishing Hydrated Lime meeting the requirements of the American Society for Testing Materials, and THE FINISHING LIME ASSOCIATION OF OHIO, delivered at the job in original packages.

All lime for base coats shall be a mixture of finishing hydrated lime, hair and/or fiber, mill mixed and delivered on the job in the original packages.

Sand—(a) Sand for scratch and brown coats shall meet the requirements of the tentative specifications for sand for lime plaster of the American Society for Testing Materials.

(b) Sand for sand finish shall be a clean, dry screened sand 100% passing a No. 10 mesh screen, unless otherwise specified for specific finishes.

(c) Colored screenings and marble dust may be used to obtain color shades.

Gauging Materials—(a) Plaster of paris shall be clean, fresh and fully calcined, meeting the specifications of the American Society for Testing Materials.

(b) When Keene's cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials.

(c) When portland cement is used it shall be a standard brand meeting the specifications of the American Society for Testing Materials and the Portland Cement Association.

Hair—(a) Hair shall be long washed goat or cattle hair free from foreign matter.

(b) Vegetable fibre free from tannin may be used and shall be long, clean, and well washed out.

Water—Water shall be clean and fit for domestic consumption.

Metal Lath—All expanded and fabricated lath shall be of an approved brand, applied in accordance with recommendations of the manufacturers.

Wood Lath—Wood lath shall be No. 1 White Pine or equal and should be as damp as practicable when mortar is applied. Courses should be broken every eighth course, and all lath laid horizontally and in one direction on ceilings. They shall be nailed securely with 3d nails to each support, and shall cross and have butt joints over a support. Lath shall be spaced ⅜ in. apart. Provide and securely place metal corner beads and metal lath strips in all exterior and interior angles.

Ground Work—(a) Grounds shall be placed and secured prior to the application of plaster. Wood lath and metal lath shall have ¾-in. or ⅞-in. grounds. Solid backings shall have ⅝-in. grounds.

Plastering on Concrete Surfaces

Base Coats (Putty Mix)

Ceilings—*Proportions:* Stiff putty, 1 part by volume; fine plaster sand, 2½ parts by volume.

Prepare ceiling by brushing or washing free from scale dust, dirt, oil, etc., and then slush down with neat portland cement as a primer or by hacking and roughing surface prepare bond to receive plaster. When this is set, apply coat as thin as possible. (If plain surface is required, it should be obtained through good formwork. Do not attempt to fill up uneven places with plaster.) Trowel to finish or texture desired. If white coat is desired, add finely screened sand to regular white coat.

Walls—⅝-in. grounds. *Proportions:* Stiff putty, 1 part by volume; plaster sand, 3 parts by volume.

Brush or wash surface free from all dirt scale, or foreign matter, and then slush down with neat cement, or by hacking and roughing surface prepare bond to receive plaster. When this is dry apply 1 coat of this mortar and by adding 1 more part of sand, apply a second coat, and bring out to grounds. Use rod and darby to bring to even surface. When firm but not dry, rub evenly with float to remove and prevent shrinkage cracks, and prepare surface to receive finish coat. When thoroughly dry apply finish coat.

Note: **All interior surfaces of concrete basement walls below ground level should be furred and lathed before plastering.**

Note: **For first class work we recommend furring and lathing over concrete surfaces.**

Base Coats Fibered (Dry Mix)

Ceilings—*Proportions:* Finishing Hydrated Lime, 2 sacks, 100 lb.; fine plastering sand, 300 lb.

Prepare ceiling by brushing or washing free from scale dust, dirt, oil, etc., and then slush down with neat portland cement as a primer, or by hacking and roughing surface prepare bond to receive plaster. When this is set, apply coat as thin as possible. (If plain surface is required, it should be obtained through good formwork. Do not attempt to fill up uneven places with plaster.)

Trowel to finish or texture desired. If white coat is desired add finely screened sand to regular white coat.

Walls—⅝-in. grounds. *Proportions:* Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plaster sand, 300 lb.

Brush or wash surface free from all dirt scale, or foreign matter, and then slush down with neat cement. When this is dry apply 1 coat of this mortar and by adding 1 more part of sand, a second coat, and bring out to grounds. Use rod and darby to bring to even surface.

When firm but not dry, rub evenly with float to remove and prevent shrinkage cracks, and prepare surface to receive finish coat. When thoroughly dry apply finish coat.

Note: **All interior surface of concrete basement walls below ground level should be furred and lathed before plastering.**

Three-coat Work on Metal Lath

Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 200 lb.

Brown coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 250 lb.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure a good clinch and key.

(c) As soon as this coat has become firm but not dry,

scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat and bring surface out to grounds.

Rod and darby to true surface, and when this coat is firm, but not dry, rub evenly with float to eliminate and prevent shrinkage cracks and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3 part by volume.

Brown coat shall be composed of: Stiff putty, 1 part by volume; plastering sand dry, 4 part by volume; hair or fibre, 3 lb. per cu. yd. mortar.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surface out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Three-coat Work on Wood Lath

Scratch or Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 200 lb.

Brown coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 250 lb.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure good clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surface out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3 part by volume. Brown coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 4 part by volume.

Application—(a) Plastering shall be to ⅞-in. grounds.

(b) Apply a coat of scratch mortar evenly and with sufficient force to insure good clinch and key.

(c) As soon as this coat has become firm but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat.

(d) When this coat has become dry apply brown coat, and bring surfaces out to grounds. Rod and darby to true surface and when this coat is firm but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Gauging—(a) If a harder set is desired, 15% to 20% of portland or Keene's cement by weight of lime may be gauged in the scratch coat.

Two-coat Work on Brick, Tile, Gypsum Block, etc. (Doubled-up Work)

Base Coats (Dry Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime and sand, mixed in the following proportions:

Proportions—Scratch coat shall be composed of: Fibered Finishing Hydrated Lime, 1 sack, 50 lb.; plastering sand dry, 225 lb.

Application—(a) Plastering shall be to ⅝-in. grounds.

(b) All surfaces of tile, etc., shall be free from oil, dirt, dust or other foreign matter, and should be wet down before applying plaster.

(c) Apply a coat of this mortar with sufficient pressure to insure bond, and double back with the same mortar, bringing the coat out to grounds; rod and darby to true even surface.

(d) When surface is firm, but not dry, rub evenly with float to remove and prevent shrinkage cracks, and to prepare surface to receive finish coat.

(e) When plaster is thoroughly dry apply finish coat.

Base Coats (Putty Mix)

Mortar—The mortar shall be a mixture of Finishing Hydrated Lime, paste or putty, which has been allowed to age, either neat or sanded for at least 24 hours, in the following proportions:

Proportions—Scratch coat shall be composed of: Stiff putty made from fibered lime, 1 part by volume; plastering sand dry, 3½ parts by volume.

Application—(a) Plastering shall be to ⅝-in. grounds.

(b) All surfaces of tile, etc., shall be free from oil, dirt, dust or other foreign matter, and should be wet down before applying plaster.

(c) Apply a coat of this mortar with sufficient pressure to insure bond, and double back with the same mortar, bringing the coat out to grounds; rod and darby to true even surface.

(d) When surface is firm, but not dry, rub evenly with float to remove and prevent shrinkage cracks, and to prepare surface to receive finish coat.

(e) When plaster is thoroughly dry apply finish coat.

Finish Coats

Putty made from Finishing Hydrated Lime shall be soaked 24 hours. This is done by sifting Finishing Hydrated Lime into an equal part by volume of clear water.

White Smooth Finish—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply evenly. Trowel to eliminate all checks, chip cracks and uneven points until a true and even surface is obtained.

Proportion—Finishing Hydrated Lime, 4 sacks, 200 lb.; plaster of paris, 50 lb.

Textured White Finish—Thoroughly mix gauging and Finishing Hydrated Lime putty and apply a very thin coat completely covering the brown coat. Follow this with heavier coat to form texture desired.

Proportions—Finishing Hydrated Lime, 3 sacks, 150 lb.; plaster of paris, 50 lb.

Sand Finish—Mix Finishing Hydrated Lime and sand dry and screen through No. 10 screen unless specified for specific finishes, and add water and mix to proper consistency.

Apply a thin coat to all mortar surfaces, and double back with same mixture and float to true plane surface.

Proportions—Finishing Hydrated Limes, 2 sacks, 100 lb.; plastering sand, 300 lb.

Keene's cement, portland cement or highly retarded gypsum may be added to sand finish as a hardener in proportions of 10% to 30% of the entire mixture.

Texture Finish—Finish in same manner as sand finish, except second coat is applied heavier, and texture desired worked in with tools or hands.

MEMORANDA

THE KELLEY ISLAND LIME & TRANSPORT CO.

World's Largest Producer of Lime and Limestone Products

GENERAL OFFICES

Leader Building, CLEVELAND, OHIO

PLANTS

WHITE ROCK, OHIO
KELLEYS ISLAND, OHIO
GIBSONBURG, OHIO
HUNTINGTON, IND.
MARTINSBURG, W. VA.
MARBLEHEAD, OHIO
ROCKPORT, MICH.
TIFFIN, OHIO
BUFFALO, N. Y.

Products

TIGER FINISH HYDRATED LIME.
TIGER MASONS HYDRATED LIME.
TIGER FIBERED LIME.
LUMP LIME.
PEBBLE LIME.
GROUND LIME.

TRADE MARK

The Company

The Kelley Island Lime & Transport Co. is the largest producer in the world of lime and limestone products. The Company is in a position to furnish any kind of lime or limestone. The general offices are at 1122 Leader Building, Cleveland, Ohio, where all correspondence should be addressed.

TIGER FINISH is packed in white bags easily identified on the job. Specify and insist upon "WYTE BAG TIGER FINISH" being used.

Tiger Finish

Tiger Finish Hydrated Lime is used to produce:
(a) Smooth White Coat Finish
(b) Sand Finish
(c) Textured Finishes

The beauty and durability of each one of these is facilitated by the use of Tiger Finish which finds general acceptance by building material dealers and plasterers.

Leading architects throughout the country gladly specify Tiger Finish because they feel confident that their clients will get the highest quality lime that the market affords.

Just a word about the way Tiger is made. First of all comes the uniformity of the limestone deposit. To the high quality of the raw material is added a scientific process of manufacture in the hands of trained operatives closely supervised by a staff of competent chemists. Constant inspection is maintained. In brief, no effort is spared to make Tiger Finish the very best hydrate that can be produced.

Tiger Fibered Lime

This product, recently added to our line of building limes, provides a way to secure a completely Tiger plastered job. Tiger Fibered Lime for base coats (scratch and brown) is made with the same care and consequently is the same high quality product as Tiger Finish.

Tiger Masons

This is a hydrated lime for lime-sand and lime-cement-sand mortars. It is accepted by mason contractors as the standard masons hydrated lime.

Quicklimes

We manufacture old-fashioned quick limes: lump—pebble—ground. These when properly slaked form a rich, fat putty for use in sand-lime and sand-lime-cement mortars.

Efflorescence

This occurs when a masonry wall is not watertight. The most practical and economical way to secure watertightness is to make sure that the mortar has a high lime content. We suggest a 2:1:9 mortar. This means two parts lime putty (made from hydrated lime or quick lime); one part portland cement; nine parts of well graded clean mortar sand—all by volume. This mix would work out by weight as follows; hydrated lime 90 lbs. or quick lime 54 lbs.; portland cement 94 lbs.; sand 900 lbs. In actual field work when using hydrated lime it has been found very practical to use two 50-lb. sacks of hydrated lime, one standard weight sack of portland cement and nine cubic feet of sand. If this practice is followed it will eliminate the necessity of weighing materials on the job.

For Concrete Work

Use ten per cent of Tiger Finish or Tiger Masons by weight of portland cement. This makes for watertightness and enhances the appearance. Lime is an addition; it does not replace any ingredient.

Exterior Stucco

Tiger Finish Hydrated Lime makes for plasticity in application and watertightness in service. It operates to lessen hair cracking. Employ 20% of Tiger Finish by weight of portland cement used.

Specifications

Please turn to the specifications of the Finishing Lime Association of Ohio given in this section. These specifications show how Tiger Finish can be employed in plastering.

Co-operative Service

Our Architectural Service and Information Department will be glad to discuss with architects, contractors and dealers any problem arising in connection with the use of lime.

NATIONAL MORTAR & SUPPLY COMPANY

GENERAL OFFICES
1520 Grant Building, PITTSBURGH, PA.
PLANTS: GIBSONBURG AND COLD SPRINGS, OHIO

DISTRICT SALES AND SERVICE

CHICAGO, ILL., 43 E. Ohio Street
COLUMBUS, OHIO, P. O. Box 722
DETROIT, MICH., 325 Merton Road
PHILADELPHIA, PA., 341 Llandrillo Road, Bala-Cynwyd, Pa.
ROCHESTER, N. Y., 167 Hillendale Street
SPRINGFIELD, OHIO, P. O. Box 875
TOLEDO, OHIO, 2030 Central Grove Avenue
WASHINGTON, D. C., 1901 K Street, N. W.

EASTERN REPRESENTATIVES: The Abbey Co., Inc.
NEW YORK, N. Y., 101 Park Avenue
EAST ORANGE, N. J., 8 Brick Church Plaza

Charter Member of the Finishing Lime Association of Ohio
Member of National Lime Association

FACILITIES

Two modern plants located at Gibsonburg, Ohio, with 35 vertical gas-fired kilns. Duplication of all processes insures uninterrupted production. Quarry area over 20 acres, average depth 40 ft.

For 30 years rock analyses have shown absolutely no variation in chemical content. Reputation of Banner Lime is built upon unusual rock deposit, plus modern processing. This latter includes mechanical sizing of kiln stone and gas-fired kilns with absolute heat regulation for uniform burning; continuous process hydration (instead of batch hydration) for uniformity; air separation (instead of screening and grinding) for purity. Daily capacity 350 tons.

Banner
(Reg. U. S. Pat. Off.)

AVAILABILITY

Building material dealers throughout the United States carry stocks of Banner Finishing Lime at all times for delivery in any wanted quantities. Consult local dealers for prices, or communicate direct with any office listed above.

Let us have one of our representatives call to show you the kind of jobs architects have specified and had plastered with base coats of Banner Fibered Lime. You will also be interested in the comments of the architects and contractors who executed these jobs.

We will be glad to put you in touch with reliable plastering contractors qualified to execute dependable lime plastering at no higher cost than hardwall work.

BANNER FINISHING LIME—HYDRATED

Famous Ohio high magnesium (dolomitic) white lime for hard, smooth, white finishes and popular textured or period finishes; for complicated, artistic mouldings and ornamental work, precast or run in place. A favorite of plasterers and contractors since 1907. Its large yield when soaked into putty gives economy by large coverage. Has plasticity that encourages big yardage and perfect wall surfaces, angles, corners, and cornices by craftsmen.

Apply in natural pure white color for later decorating; or, integral mineral colors, carefully and thoroughly mixed, may also be used.

Packed in 50-lb. heavy double-wall paper, valve bags. Delivered to the job in original packages bearing trade-marks printed in blue for easy identification.

Analysis—The purity of Banner Lime is proven by the following analysis; certified by the Pittsburgh Testing Laboratory. Results were calculated on non-volatile residue.

The extra quality of Banner is indicated by the last column which gives the requirements of the American Society for Testing Materials, specification C-6-34T and United States Government Master Specification SS-L-351 (superseding 249) for finishing lime.

	Banner analysis, per cent	Requirements A.S.T.M. Spec. C-6-34T U. S. Govt. Spec. SS-L-351
Carbon dioxide	.94	Max. permitted 5.0%
Calcium and magnesium oxides	97.68	Min. required 95.0%
Sieve test:		
On 30-mesh	.004	Max. permitted 0.5%
On 200-mesh	3.32	Max. permitted 15.0%

FOR EVERY BUILDING PURPOSE

Use Banner Finishing Lime also for brickwork, tile setting, stone mortar, waterproofing concrete. Quality work is more easily achieved with a quality product.

Architects prefer quality over price. They know that finishing lime is necessarily a superior lime product. Banner Finish is often used for brick mortar (Detroit Edison Company used 300 tons for their Delray Power Plant in 1937).

BANNER BASE COAT LIME—FIBERED

For lime plaster. Famous Banner Finishing Lime, mill-mixed with proper proportions of mixed fiber, comes to the job in original packages ready for addition of just sand and water. Gives the convenience demanded by modern practice together with the finest qualities of lime plaster. May be mixed and used immediately or aged to improve working qualities. If used at once, very thorough mixing is essential. Machine mixing is preferable in all cases.

Every architect knows the merits of "old-fashioned" lime plaster: durability without limitation; fire resistance; insulation against heat and cold and *sound*. Banner Lime carries at least three times its own weight of sand, so plaster made of it costs less; oversanding danger is less; you get full grounds plus the natural sound-deadening qualities of lime plaster.

This material allows you to handle your plastering jobs in a more flexible manner than any other plastering material obtainable. We recommend soaking of Banner Fibered Lime at least over night in order to get the best workability. Banner Lime plaster may be stored as lime putty for sanding as needed, or it may be mixed with sand and mortar stacked for ageing and later use. It may also be used immediately after mixing, but maximum workability and sand-carrying capacity come from lime putty that has been soaked at least over night. Mortar may be distributed throughout the various floors of a building and mechanics' boards may be kept filled at all times.

SUPERIOR MASONS LIME—HYDRATED

TRADE-MARK

A high magnesium white mason's lime, used for all building construction work (except finishing or whitecoating) either as straight lime mortar or in any proportion with portland or masonry cements; also concrete admixture. Extensively used by United States Government in concrete construction; in dam work under Government supervision; in public utility enterprises where specifications are stringent and rigidly enforced. Distributed by building material dealers.

BANNER FINISHING LIME—HYDRATED; BANNER BASE COAT LIME—FIBERED

Mellon Institute, Pittsburgh, Pa.
Plastering Contractors: McNulty Bros. Co., Pittsburgh
Banner Finish used throughout

Typical Residence Plastered with Three Coats of Banner Lime
Scratch and Brown Coats—Banner Fibered Lime Plaster. White Coat—Banner Finish

SPECIFICATIONS

Complete standard specifications are given in Sweet's Catalog File, Architectural, by the Finishing Lime Association of Ohio.

As charter members of this organization we recommend the use of Banner Lime according to these specifications for standard practice, varying only as local conditions dictate. Complete standard specifications for your A.I.A. File will be cheerfully furnished upon request.

Short Specifications

A convenient short specification to insure your getting Banner Fibered Lime Base Coats and Banner Lime Finishing Coat:

Base Coat plastering, both scratch and brown coats, shall be done with Banner Base Coat Lime—Fibered, delivered at the job in original packages and prepared for use in accordance with the manufacturer's recommendations.

Finishing coats shall be done with Banner Finishing Lime—Hydrated, delivered at the job in original packages and prepared and used according to the manufacturer's recommendations.

Detailed Specifications

If you prefer to write more detailed specifications, we suggest the following:

Materials for Plastering—Banner Base Coat Lime—Fibered for scratch or base coats. Banner Base Coat Lime—Fibered for brown or leveling coats. Banner Finishing Lime—Hydrated for finishing purposes. All the foregoing materials manufactured by National Mortar & Supply Company, Pittsburgh, Pa.

Sand to be clean, sharp, plastering sand graded from fine to coarse and meeting A.S.T.M. specifications.

Gauging materials—Plaster of paris or Keenes cement shall be a standard brand, meeting the specifications of the A.S.T.M.

Water shall be clean and fit for domestic consumption.

Mortar boxes and tools shall be thoroughly cleaned before using.

If you desire putty mix method for preparing the plaster used on your job, select suitable specification following, making notation that:

Banner Base Coat Lime—Fibered is to be shaken or scattered over the surface of clear water held in clean mortar box or tank and allowed to settle and form thick paste or putty. Soak at least over night (24 hours is better) and then mix putty and sand thoroughly.

If you prefer mixing sand and lime dry, select suitable specification following, making notation that:

Lime and sand are to be thoroughly mixed dry and water added to make mortar of proper consistency. Very thorough mixing is desirable and machine mixing preferable. Time and labor used in properly mixing gives returns in the better working of the mortar in application.

Mortar may be used immediately after mixing, *or*

Mortar shall be stacked or left in mortar box properly protected and kept wet, which increases the workability of the plaster.

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Proportions—

Three Coat Work on Metal Lath

Putty Mix—Proportions:
Scratch Coat—1 part Banner Fibered Lime putty
2 parts clean sharp sand
Brown Coat—1 part Banner Fibered Lime putty
3 parts clean sharp sand

Dry Mix—Proportions:
Scratch Coat—1 sack, 50 lbs. Banner Fibered Lime
200 lbs. clean sharp sand
Brown Coat—1 sack, 50 lbs. Banner Fibered Lime
250 lbs. clean sharp sand

Three Coat Work on Wood Lath

Putty Mix—Proportions:
Scratch Coat—1 part Banner Fibered Lime putty
2 parts clean sharp sand
Brown Coat—1 part Banner Fibered Lime putty
3 parts clean sharp sand

Dry Mix—Proportions:
Scratch Coat—1 sack, 50 lbs. Banner Fibered Lime
200 lbs. clean sharp sand
Brown Coat—1 sack, 50 lbs. Banner Fibered Lime
250 lbs. clean sharp sand

Application on Metal Lath or Wood Lath—Plastering shall be ⅞-in. grounds. Apply the base or scratch coat evenly and with sufficient pressure to insure good keys. As soon as this base coat has become firm, but not dry, scratch entire surface with broom or metal scratcher to insure bond for brown coat. When base coat is dry, apply brown coat, bringing surface out to grounds. Rod and darby to true surface and when this coat is firm, but not dry, rub evenly with float to eliminate and prevent shrinkage cracks, and to prepare surface to receive finish coat.

Brick, Tile, Etc.—

Two Coat Work (Doubled Up Work):

Putty Mix—Proportions:
Base Coats—1 part Banner Fibered Lime putty
3½ parts clean, sharp sand

Apply a coat of this mortar with sufficient pressure to insure bond and double back with same mortar bringing the coat out to ⅝-in. grounds; rod and darby to true, even surface.

Dry Mix—Proportions:
Base Coats—1 sack, 50 lbs. Banner Fibered Lime
300 lbs. clean sharp sand

Apply a coat of this mortar with sufficient pressure to insure bond and double back with same mortar bringing the coat out to ⅝-in. grounds; rod and darby to true, even surface.

Finishing Coats—Carefully soak Banner Finishing Lime by shaking or scattering over surface of clean, drinkable water held in mortar box or tank that does not leak. Allow to soak at least over night. Gauge putty with plaster of paris before applying.

(See complete standard specifications — including specifications for plastering on concrete surfaces—by the Finishing Lime Association of Ohio printed in this volume, same section.)

THE OHIO HYDRATE & SUPPLY COMPANY

Manufacturers of Lime and Limestone Products

GENERAL OFFICES AND PLANT
WOODVILLE, OHIO

Charter Member of the Finishing Lime Association of Ohio

DISTRICT REPRESENTATION

BOSTON, MASS., 18 Wellesley Park, Dorchester
CHARLOTTE, N. C., Mayfair Hotel
CHICAGO, ILL., 5247 Bernard Street
CINCINNATI, OHIO, 1038 Delta Avenue
DENVER, COLO., Denver National Bank Building
DETROIT, MICH., 6219 Lincoln Avenue
ELYRIA, OHIO, 8 Plaza Apartments
MIAMI, FLA., 1750 Purdy Avenue, Miami Beach
MINNEAPOLIS, MINN., 3246 No. Humboldt Street
NEW YORK, N. Y., 25 Central Park West
PHILADELPHIA, PA., 1823 Beverly Road
PITTSBURGH, PA., 1121 Ross Avenue
PORTLAND, ORE., 2221 No. Albina Avenue
PROVIDENCE, R. I., 714 Industrial Trust Building
SYRACUSE, N. Y., 204 Milford Drive, West
WASHINGTON, D. C., 4441 47th Street, N. W.

Products

Ohio White Finishing Lime
Hawk Spread White Finishing Lime
Ohio Sanlime Colored Sand Finish
Ohio Ritewall Hair Fibred Lime Plaster
Mastite Masonry Mortar
Ohio Masons Hydrated Lime
Ohio Outside Stucco
Ohio Quick Limes

Ohio White Finishing Lime (Hydrated)

Produced in the heart of the famous finishing lime district from pure dolomitic limestone, testing 99½% calcium and magnesium carbonate, which when flame burnt, picked, ground, hydrated and separated, results in a finished product particularly adapted for whitecoating, base coat plastering and other building purposes.

It is packed in 50-lb. heavy duplex paper bags, delivered to the job in original packages, bearing the above trade-marks.

TRADE-MARKS

Ohio Sanlime

As the name implies, this is a prepared white or colored sand finish, produced in white, buff, light buff, golden buff, pink and light green. It is composed of white plastic products and white dried and uniformly grained sand. Being machine mixed, it produces a colored finish of uniform texture and coloring, free from blemishes.

Directions—Use a clean, tight soaking box and use only clear, pure water. Keep tools clean. Enough water should be added in soaking to form the proper consistency. Add the water slowly so as not to separate the sand from the plastic ingredients and coloring. Allow it to soak from 12 to 48 hours; then apply in the usual manner.

Covering Capacity—From 150 to 250 yds. per ton of material.

The texture can be varied according to the artistic skill of the plasterer and tools used in finishing.

Ohio Ritewall Hair Fibred Lime Base Coat Plaster

A machine mixed, neat plaster, particularly adapted for use in scratch and brown coats on solid backing, such as brick, stone, hollow tile, gypsum block, etc. It is also an ideal base coat to be applied on wood lath and metal lath. It should not be applied over papered or painted surfaces. It has certain definite metal preserving and acoustic improving properties.

Manufacturing Facilities

The Ohio Hydrate & Supply Company plant is located one mile south of Woodville in the heart of the finishing lime district. Capacity in the production of various lime products is approximately 600 tons per working day. The capacity of the stone and processing plants is approximately 3000 tons per working day.

Ohio Mastite Masonry Mortar

A machine mixed mortar consisting of the proper proportions of portland cement and Ohio hydrated lime and a hardener to produce a tight, hard mortar joint. It is a neat material.

Directions—Mix 1 part of Mastite to 3 parts of well-graded masons sand and apply in the usual manner.

Ohio Masons Hydrated Lime

Should be used in accordance with standard practice for lime-sand and lime-cement-sand mortar. It is also a convenient product to use in lubricating and watertightening concrete mixtures. The quantity required is from 5 to 15 lbs. per bag of cement, depending on the mix.

Ohio Outside or Exterior Stucco

A neat or sanded, machine mixed product, which on account of its plasticity lends itself to be applied in various textures depending on the skill of the plasterer and tools used. It is made in the following tints or colors: white, cream, tan and light green.

It should be applied on solid backing, wood or metal lath. It is not suitable for application over painted or papered surfaces. It should be applied within 2 hours from time of mixing.

Ohio Quick Limes

Manufactured in lump and ground burnt forms and when properly slaked according to our directions form a rich, fat putty for use in lime-cement mortar, lubricating and watertightening concrete, plastering, etc.

Specifications

Please turn to the specifications of the Finishing Lime Association of Ohio given in this section. These specifications show how Ohio Lime can be employed in plastering.

Co-operative Service

Our research and sales departments will be glad to furnish any additional information required relating to the preparation and use of our products.

THE WOODVILLE LIME PRODUCTS COMPANY

Manufacturers of Blubag Brands of Lime Products for Building Uses

TOLEDO, OHIO

PLANT AND QUARRIES, WOODVILLE, OHIO
Charter Member of The Finishing Lime Association of Ohio

PRODUCTS

Blubag Brands of Finishing Hydrated Lime — White Enamel, White Lily, Gold Medal; *Blubag* Fibered Lime Plaster; *Blubag* Sand Finishes (Interior); *Blubag* Stucco Finishes (Exterior); *Blubag* Brick Cement; Prestone Superlime Plaster; Ace High Mason's Lime; Weatherite Waterproofing Mason's Lime; Lump Lime; Rex Cement Products Improver; Cold Water Paints: Newkote, Interior; Stucco Seal, Exterior.

QUALITY OF GREATEST IMPORTANCE

Eighty per cent of the interior of a building visible to the eye is wall. Quality of lime used is, therefore, of greatest importance and should receive architect's most careful consideration.

Blubag Lime Products are guaranteed to meet the standard of specifications of the American Society for Testing Materials as well as those of the Bureau of Standards.

LABORATORY TESTS INSURE UNIFORM QUALITY

Nothing is taken for granted in the production of *Blubag* lime products. Every process of manufacture is under the supervision of seasoned and experienced men and skilled chemists.

A complete and modern research and testing laboratory is an important factor in making products of the highest quality that may be obtained anywhere at any price.

BLUBAG FINISHING HYDRATED LIME

For plain and textured wall finishes. Made in three brands: White Enamel, White Lily, Gold Medal, all of equal quality and all packed in the distinctive blue package labeled *"Blubag."* Six and one-quarter gallons of water to each bag of lime produces a uniform putty of perfect consistency for gaging. Its characteristic whiteness is always reflected in the finished job.

BLUBAG FIBERED LIME PLASTER FOR BASE COAT PLASTERING

Prepared from our finishing hydrated lime mixed with proper proportions of fiber, thoroughly distributed and ready for mixing with sand and water at the job. Can be applied to wood or metal lath, brick, gypsum tile or other masonry bases immediately after mixing. Develops excellent acoustical qualities and produces a hard, durable wall.

Twelve Specific Properties That Make Blubag Fibered Lime Plaster Outstanding—

(1) Durability.
(2) Specific sound-deadening properties.
(3) Develops high early and ultimate strength.
(4) Improves with age.
(5) Fire-resistant.
(6) Workability enables the plasterer to produce straight walls and angles.
(7) Retemperable—eliminates loss of material.
(8) Increases productivity of plasterer with less effort.
(9) Non-corrosive to metal.
(10) Maximum covering capacity.
(11) Produces even unbroken surfaces.
(12) Gives perfect base for decorations.

BLUBAG SAND FINISHES

Blubag Sand Finishes are standardized products using graded, natural colored aggregates, with standard cementitious materials, factory mixed and bagged, arriving at the job ready for the mixing water and application. They can be applied as sand float or textured finishes.

ACE HIGH MASON'S HYDRATED LIME

A product of exceeding whiteness that mixes with sand and portland cement in definite proportions for all types of masonry construction. Special table of ratios sent on request.

WEATHERITE WATERPROOFING MASON'S HYDRATED LIME

Complies with all physical and chemical specifications for mason's lime. The waterproofing qualities are developed entirely in the process of manufacture, without the use of chemicals, which produces a lime of such physical state that when used in a mortar, it develops high water-resistance and improves all other properties of masonry mortar.

HOW TO SPECIFY BLUBAG FINISHING LIME

For a complete standard form of specification refer to the pages in this catalogue of The Finishing Lime Association of Ohio.

Select the particular specification to fit your requirements and insert the brand name *"Blubag* Brands of Finishing Hydrated Lime," together with "manufactured by The Woodville Lime Products Company, Toledo, Ohio." Detailed specifications on all *Blubag* lime products will be sent to you upon request.

FACILITIES AND DISTRIBUTION

Plant and quarries are located at Woodville, Ohio, and general offices at Toledo, Ohio. Products are distributed through all principal building material dealers throughout the United States.

AMERICAN CYANAMID AND CHEMICAL CORPORATION

STRUCTURAL GYPSUM DIVISION

TELEPHONE
Circle 7-0100

EXECUTIVE OFFICES
38 Rockefeller Plaza, NEW YORK, N. Y.

SALES OFFICES IN THE PRINCIPAL EASTERN CITIES

For Gypsteel Pre-cast Roofs and Floors, and Gypsteel Gypsum Partition Tile, see File Index

Products

GYPSTEEL GYPSUM PLASTERS.

Daily Delivery Service

The central location of our plant at Linden, N. J., in the New York Metropolitan Area, makes rapid and prompt deliveries to all parts of that area possible. Gypsteel Plasters are delivered by truck within fifty miles of New York, N. Y., the morning following the receipt of orders. Deliveries to points beyond are made by rail.

Full Line of Plasters

Gypsteel Gypsum Plasters are supplied for all uses—Neat, Sanded, Wood-Fibered, Gauging, Moulding, Bond Coat for application to concrete, Colored Finishing Plasters, Finishing and Mason's Hydrated Limes and Super-Tex Plastic Paint.

All Gypsteel Gypsum Plasters are shipped in strong paper bags marked with a large diagonal green stripe for easy identification.

Ask for Service Sheet No. 6 giving complete specifications and other useful information.

GYPSTEEL GYPSUM PLASTERS

Description and Advantages

The exclusive Gypsteel Process of making gypsum results in a product of great purity and uniform quality. One batch of gypsum made by our process is just the same as another, for *it does not depend for its uniformity upon the percentage of gypsum found in gypsum rock in nature,* which varies greatly. Some of the outstanding advantages of Gypsteel Gypsum Plasters are:

(1) Great Slip and Spread.
(2) Strong and Tough Walls.
(3) Uniformity in Set and Surface Hardness.
(4) Eliminates Climatic, Setting Time and Sand Complaints.

Gypsteel Neat Plaster

Requires addition of sand on the job. Most economical on large operations where a good, clean sharp sand is available. Is well fibered for scratch or brown coats over wood lath, metal lath, brick or gypsum and clay surfaces. May be supplied unfibered when desired. Mixed according to directions, one ton with sand added will cover as much surface as 3 tons of ready sanded plaster.

Specifications—Grounds should be ¾ in. for 2-coat work and ⅞ in. for 3-coat work.

Gypsteel Sanded Plaster

Ready for use with addition of water only. Clean, sharp sand assures a mortar that is smooth and easily worked. Especially recommended in localities where good sand is not available at reasonable prices.

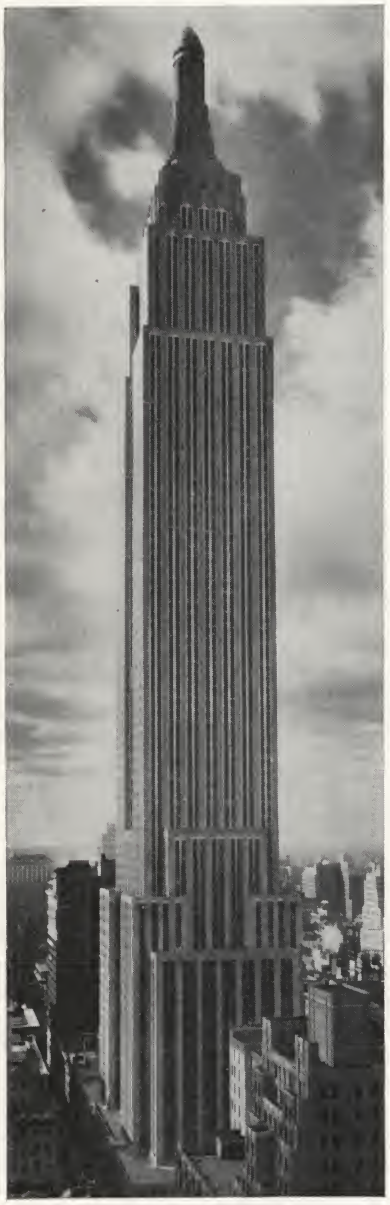
For use on wood lath, metal lath, gypsum tile, brick or clay tile.

Specifications—Grounds and lathing to be same as neat plaster.

Gypsteel Wood-Fibered Plaster

Contains finely shredded wood fiber giving the plaster toughness, flexibility and bulk. Spreads easily and is especially suitable for two coat work. Comes ready to apply with the addition of water only. If desired, equal parts of good, clean sand may be added at the job. Wood-fibered plaster is more bulky than other grades and will cover a slightly greater area.

Specifications—Grounds and lathing same as for neat plaster. Is to be used with or without sand. If sand is added at the job it will accelerate its set, consequently, the mill should be notified how the material is to be used so that proper retardation can be made.



Empire State Building, New York, N. Y.
A Gypsteel Plaster Job Throughout
Photo by Techni-Photo, New York, N. Y.

Gypsteel Bond Plaster

Especially made for application to interior concrete ceilings and walls. Gypsteel Bond insures greatest adhesion to concrete surfaces. Used with addition of water only. Walls must be clean and free from dust, oils or efflorescence. We advise cleaning concrete surfaces with a weak solution of muriatic acid, using a wire brush.

Grounds to be of sufficient thickness to bring to a true and even surface—usually ¼ in. Dries to a light gray surface, ready for application of white finish coat or it can be finished by troweling to its natural gray color.

Gypsteel Gauging Plaster

Is manufactured from selected gypsum. It is cool and smooth working and has uniform setting qualities.

For Trowel Finish—Mix approximately three parts of lime putty, by measure, with one part of dry gauging plaster; equal to two parts of dry hydrated lime and one part of dry gauging plaster, by weight. Mix thoroughly; apply in usual manner.

Gypsteel Moulding Plaster

Is an exceptionally high grade and finely ground material. Possesses cool working qualities and assures a clean sharp definition in finished cast.

Gypsteel Prepared Finishes (In Colors)

A ready prepared finish requiring only addition of water. Comes in various colors and tints. Color chart sent upon request. Permits a wide variance in decorative schemes in textured and stippled finishes of all kinds. Colors are lasting.

Specifications—Gypsteel colored finishes require only the addition of water to make them ready for application. Mix thin and in small batches as required. Base coat should be well scratched or broomed before applying finish; walls should be dry.

COVERING CAPACITY OF GYPSTEEL PLASTERS (APPROXIMATE)

Plastering base	Neat, yd. per ton	Wood-fiber, yd. per ton	Sanded, yd. per ton
Wood lath	190 Sanded 2 to 1	115 Unsanded	65
Metal lath	110 Sanded 2 to 1	90 Unsanded	40
Plaster board	200 Sanded 2 to 1	60 Unsanded	75
Gypsteel tile	200 Sanded 3 to 1	140 Sanded 1 to 1	65
Clay tile and masonry	175 Sanded 3 to 1	110 Sanded 1 to 1	50

WASEM PLASTER COMPANY

FORT DODGE, IOWA

The Company—"WASEM" brands of high grade wall plasters and finishes are produced from the "Heart of the Rock" deposit of gypsum at Fort Dodge, Iowa. This deposit is well known and widely recognized for the superior grade of plaster it produces.

WASEM PLASTER COMPANY Products are mined from this deposit and manufactured from selected rock under careful and personal supervision, thus insuring the satisfaction of durable walls of greater strength and uniform hardness. Our deposit is rich in high grade rock and is sufficient to last for many decades, assuring continuity of service.

Improved Methods—With the installation of new, highly improved equipment, our method of processing is under absolute control at every stage of production. These new machines are a distinct step forward. We have unequaled facilities for producing a plaster of the highest uniform quality throughout—adaptable for any type of plastering.

Wasem Brands are finer ground and have great bulk. One of the greatest improvements in manufacturing gypsum plaster has been accomplished through tube mill grinding. Regardless of the conditions under which the plaster is applied, this free-working plaster is easy to mix in the box and is easy working.

The entire resources of the WASEM PLASTER COMPANY are devoted exclusively to the manufacturing of plaster.

Meet Standard Specifications—Made to meet the requirements of the standard specifications of the American Society for Testing Materials, Wasem Plaster is packed in standard "Red Heart" *airsealed moistureproof* multiwall paper bags bearing the familiar trade-mark.

WASEM PLASTER PRODUCTS

WASEM GYPSUM PLASTER (Fibered or Unfibered)

Description—Manufactured from gypsum entirely from the Fort Dodge deposit, Wasem Gypsum Plaster is delivered to your job in modern multiwall paper bags and is for use with sand mixed at the job. The plaster is plastic and easy working. It is hard and strong and has great fire-resisting qualities.

Coverage—Under average conditions gypsum cement plaster when mixed and applied in accordance with standard conditions will cover about as follows:

Plastering Base	Wood Lath	Metal Lath	Gypsum Lath	Brick and Clay Tile	Gypsum Tile
Sq. Yds. per Ton	180-210 (Sanded 2 to 1)	105-135 (Sanded 2 to 1)	225-240 (Sanded 2 to 1)	165-200 (Sanded 3 to 1)	235-255 (Sanded 3 to 1)

WASEM WOOD FIBER PLASTER (Ready-to-Use)

Description—Fibrous shredded wood, mixed at the mill gives to this plaster great strength and fire-resistance. Only mixing with water is required to prepare this popular plaster ready for use. Does away with the use of sand.

Coverage—Under average conditions gypsum wood fiber plaster when mixed and applied in accordance with standard conditions will cover about as follows:

Plastering Base	Wood Lath	Metal Lath	Gypsum Lath	Brick and Clay Tile	Gypsum Tile
Sq. Yds. per Ton	90-100 (Unsanded)	55-65 (Unsanded)	115-120 (Unsanded)	75-85 (Equal parts sand)	90-104 (Equal parts sand)

WASEM GAUGING PLASTER (Slow Set and Quick Set)

Description—This plaster is made from carefully selected gypsum. It is specially prepared to insure mixing with lime putty with easy working qualities. (Tiger or Cream of Lime Hydrated Lime is recommended.)

Wasem Gauging Plaster is white, either Quick-set or Slow-set, and gives an excellent finish to the walls.

Coverage—Under average conditions one ton of Gauging Plaster when mixed one part of dry gauging to two parts of dry hydrated lime by weight will cover about 1,600 sq. yds.

SNOW WHITE GAUGING PLASTER

Description—A pure white gauging plaster, either Quick-set or Slow-set, very effective for white finish.

Coverage—Same as for Wasem Gauging Plaster.

HYDRATED FINISHING LIMES

Description—These finishing hydrated limes are made from selected Ohio Limestone and are specially prepared for finishing purposes. They are easy working, smooth working, and uniform. Shipped in 50-lb. paper bags.

Brands—Tiger, Cream of Lime.

Coverage—Under average conditions one ton of Hydrated Lime when used in proportions of two parts of dry lime to one part of dry gauging plaster by weight, should cover about 800 sq. yds.

MONARCH GYPSUM LATH

Description—The handy-size sheets—16x32 in. or 16x48 in. (also 32x48 in.), 3/8 in. thick—are quickly nailed and quickly plastered. Tests prove that gypsum plaster adheres to Monarch Gypsum Lath making a firm durable bond.

Gypsum lath requires no wetting before plastering and prevents water from reaching and swelling the framework.

Because this lath is rigid and because the plaster, instead of being broken up to form keys, all contributes to wall strength, the walls are much stronger, denser, and more durable.

Packed—In handy 6-piece bundles. Look for the Monarch Brand.

WASEM GYPSUM TILE

Description—For partitions, furring and column covering. Standard face dimensions—12x30 in. Thickness—1½ to 6 in., both solid and hollow. Wasem Gypsum Tile makes an ideal, easily and quickly erected plaster base. Alterations in Wasem Gypsum Tile walls are easy to make.

SIZES AND WEIGHTS

Sizes of Wasem Gypsum Tile, Inches	For Ceiling Heights up to	Wt. Tile per Sq. Ft. Lbs.	Wt. Mortar per Sq. Ft. Lbs.
1½ in. Split— 1½x12x30	Furring	4.9	1.4
2 in. Split— 2 x12x30	Furring	6.4	1.4
2 in. Solid— 2 x12x30	10 ft.	9.4	1.5
3 in. Hollow— 3 x12x30	13 ft.	9.9	2.0
3 in. Solid— 3 x12x30	15 ft.	13.0	2.0
4 in. Hollow— 4 x12x30	17 ft.	13.0	2.5
5 in. Hollow— 5 x12x30	20 ft.	15.6	2.75
6 in. Hollow— 6 x12x30	30 ft.	16.6	3.0

WASEM BONDING PLASTER

Description—Specially prepared for plastering over *concrete surfaces.* It has great cementation qualities. It adheres to concrete. Surface of concrete should be roughened. Use for both scratch and brown coat.

Coverage—Depends on thickness required and the condition of the concrete surface. Ordinarily one ton will cover from 90 to 120 square yards.

WASEM BANNER WHITE TROWEL FINISH

Description—A trowel finish, prepared from carefully selected gypsum. Ready to use with the addition of water only. Allow the finish to soak in the water without hoeing for at least ten minutes; then mix thoroughly.

The base plaster coat must be set and bone dry before the trowel finish is applied. If the suction is too great, sprinkle lightly with clear water, using a clean brush. Apply in two coats. Scratch in a thin coat well ground into base. Allow to draw a few moments; then apply second coat. Trowel to a smooth finish, applying water when needed, using a damp brush. Troweling should be complete before finish is set.

Coverage—Under ordinary conditions Wasem Banner White Trowel Finish will cover about 450 to 500 yards.

STANDARD SPECIFICATIONS FOR THE USE OF GYPSUM CEMENT PLASTER

Care of Plaster—Plaster must be stored in a dry, cool place and circulation of air through the warehouse avoided. Never place on the ground, against a damp wall, or in any damp place when delivered to the building.

Grounds—For plaster board, wood lath, wire and metal lath, grounds shall be not less than ¾ in.

For plaster blocks, brick or tile walls, grounds shall be not less than ½ in.

Plaster Board—To be applied according to manufacturer's directions.

Lathing—For wood lath, use a good grade free from knots, sap and bark, to be spaced not less than ¼ in. apart and securely nailed with not less than two 3d galvanized lathing nails for each stud to each lath. Break joints every fifth lath and leave space of ¼ in. between ends of lath. Dry laths must be thoroughly soaked the day before or not less than from two to five hours before the plaster is applied. This will prevent buckling. Do not extend lath through a partition wall.

General Directions for Mixing—Use a clean, tight 3½ ft. by 7 ft. by 12 in. deep. The box should be thoroughly cleaned after each mixing and kept free from dirt and lumps of old plaster. Raise one end of the box about 4 in.

SAND

Quality—Use only clean, sharp sand free from loam, dirt, and frost. Avoid quicksand. Sand should pass through a ten and remain on a thirty mesh sieve.

Quantity—For plaster board, wood lath, wire and metal lath, use two parts of sand of the quality above described to one part of fibered plaster. For plaster blocks, brick or tile walls, use three parts of sand of the quality described above to one part of unfibered plaster.

NOTE: *The above proportions in all cases to be by weight. The following is a convenient way to arrive at the above proportions:*

Two to One*—Use six ten-quart buckets, struck measure, of sand to a one-hundred pound bag of plaster.*

Three to One*—Use nine ten-quart buckets of sand, struck measure, to a one-hundred pound bag of plaster.*

If other than the above quality and quantities of sand are used, the manufacturer will not be responsible for the results obtained.

Mixing—First put in a layer of sand, then one of plaster; hoe dry from one end of box to the other, then back again, working the sand and plaster until thoroughly mixed. Now draw the material to the high end of the box, put the water in the lower end of the box and hoe the plaster in the water. Mix water and plaster thoroughly. Mix thin at first, then add sufficient dry plaster and sand to bring to proper consistency for applying. Let the mortar stand ten minutes after mixing with the water.

Mix with water immediately after the sand and plaster are dry mixed.

Always use clean water, free from alkali, salt, and other impurities.

Never wash tools in water to be used in mixing plaster.

Keep tools and mortar board clean.

Have a separate barrel of water for washing tools.

Do not mix more material at one time than can be used in one hour.

Never re-temper the plaster after it has commenced to set.

Do not mix one gauging with another.

ARTSTONE ROCOR CORPORATION

TELEPHONE
STerling 8-2468

45th Street and First Avenue, Bush Terminal, BROOKLYN, N. Y.

For other Artstone Products, see File Index

ARTSTONE PORTLAND CEMENT STUCCO

"There is No Substitute for Artstone Quality"

ARTSTONE PRODUCTS

A Truly Permanent Material

ARTSTONE is a *true* portland cement stucco, one of the oldest manufactured in the United States. It is permanent, beautiful in color and texture, and forever weatherproof. Artstone is a complete material in itself. Machine-mixed, it requires only the addition of water. Its use assures a correctly formulated "weather coat," eliminating entirely hazardous job-mixing of finish coat material.

Artstone Stucco has stood the tests of time and of all climatic conditions on the exterior of thousands of important residences, churches, clubs, public buildings and industrial structures. It is used economically and effectively in the renovation and modernization of old buildings. It is scientifically waterproofed and is ideal for the interior walls and ceilings of laundries, swimming pool and shower rooms and elsewhere where moisture and condensation is a serious problem. It is widely used and highly regarded as a surfacing material in color over concrete for outdoor swimming and wading pools.

Artstone Stucco is manufactured to even higher standards than those of the American Concrete Institute. Its use is an insurance against the ravages of time and weather. Each Artstone job stands as a lasting testimonial to the architect's care in the selection of a truly permanent material.

Storm King Theatre, Cornwall, N. Y.
ERARD A. MATTHIESSEN, Architect.
Artstone Stucco and Artstone Architectural Finish used

Twenty-five Colors

There is animation to Artstone, its colors never "die." Pigments are permanent and unaffected by weather, rain or the actinic rays of the sun. A wide range of 25 standard colors is available. An Artstone Color Chart will be sent upon request. Special colors are made to order and include Brownstone, Brick Red, Black, etc.

Package and Coverage

Artstone is delivered to the job in 100-lb. bags ready for use after the addition of clean water. Average coverage for most finishes is 5 square yards per bag. Spatter dash or other light textures require less material; bag rubbed or heavily torn trowel textures more.

Artstone Specifications

Base Coats—There shall be two base coats: scratch and brown. Each shall be composed of one part grey portland cement and three parts clean, sharp, well-graded sand to which may be added, if desired, not more than eight (8) pounds of hydrated lime for each sack of portland cement used.

The scratch and the brown coat shall each be applied approximately ⅜ in. thick, making a total thickness of not less than ¾ in. Each base coat shall be troweled on hard and tight and, before it has set, cross-scratched to provide a mechanical key for the next coat.

Each base coat shall be dampened twice a day for two days and then permitted to dry out for at least five days; and, before the next coat is applied, the wall shall be evenly wet down to cut suction. All wetting down shall be done by means of a fog spray.

Finish Coat—The finish coat shall be Artstone Stucco, manufactured by ARTSTONE ROCOR CORPORATION, Building 65, Bush Terminal, Brooklyn, N. Y., color and texture to be selected by the architect.

Nothing but clean, drinkable water shall be mixed with Artstone and the same quantity of water shall be used for each mix. The Artstone finish coat shall be applied to an average thickness of not less than ¼ in. A tight skim coat of Artstone shall first be troweled on, doubling up immediately for finish or texture.

Joinings, leaving-off and scaffold marks shall be avoided, and work having such disfigurements shall not be accepted.

Curing—Starting on the day after application of the finish coat the walls shall be dampened twice a day for two days. A light fog spray shall be used for this work and the wall shall not be soaked down by means of an open hose at any time.

Note: During cold weather caution must be exercised in the application of the base coats and Artstone. Close observation of weather conditions will insure uniformly perfect results.

Artstone Plastic Marble for Corridor Walls

Artstone Plastic Marble is used for dadoes and corridor walls in schools and other public buildings and should be specified wherever comparatively smooth, washable, and wear and abuse-resisting interior surfaces are desired. Colors and specifications are the same as for Artstone Stucco.

ARTSTONE ARCHITECTURAL FINISH

(Specified and Used for Years as "Tuckahoe" Colored Interior Plaster)

Artstone Architectural Finish is an interior finish-coat plaster in color for application over sanded gypsum, lime or Keene's cement plaster base coats. It produces a beautiful, colored, self-decorating, wear-resisting surface. No paint, glaze or other wall treatment is required.

Artstone Architectural Finish has been in use for years in residences, offices, churches, schools and in public buildings of all types. It possesses a relatively high degree of acoustical efficiency, when compared to painted plaster ordinarily used. Its use is therefore desirable for all wall and ceiling surfaces where no special acoustical treatment is planned.

Color and Textural Effects

Artstone Architectural Finish can be applied in a wide variety of textural finishes, and in caenstone, travertine and other natural stone effects, jointed to simulate masonry. Its rich plastic properties make application easy. Plasterers like to use it.

A range of 15 beautiful colors meets practically every need for interior decoration. Color and Textural Chart will be sent upon request.

Package and Coverage

Artstone Architectural Finish comes in 100-lb. bags, ready for use after adding water. Coverage varies from 10 to 15 square yards per bag depending upon the texture and evenness of base. Average coverage is 12 square yards per bag.

Special Artstone Architectural Finish for Casting and Run Work

Special materials for casting and for run work are manufactured to match colors selected. Time of set is adjusted for specific purpose required and the material manufactured accordingly. Specifications should call for the use of Artstone Special Interior Plaster for Casting or Run Work in color as selected by the architect.

Specifications (Short Form)

The finish coat of all interior plaster (unless otherwise specified) shall be Artstone Architectural Finish (Colored Interior Plaster), manufactured by ARTSTONE ROCOR CORPORATION, Building 65, Bush Terminal, Brooklyn, N. Y., color and texture to be selected by the architect.

Nothing but clean, drinkable water shall be added to the material and it shall be mixed and applied in accordance with printed directions which the manufacturer will furnish to the contractor upon request.

Water Works, Rocky Mount, N. C.
WILLIAM C. OLSEN, Engineer.
Artstone Stucco and Artstone Architectural Finish used

Specifications and descriptive leaflets also available for the following Artstone products: Artstone Integral and Transparent Surface Waterproofings, Audicoustone Acoustical Plasters, Rocor Colored Mortar, Artstone Textural Plastic, Roman Tex-Coat, Roman Stucco, "Dust-X" Cement Floor Hardener, Roctop Colored Concrete Floor Topping, and Roctop Concrete Floor Surface Treatments in Color.

INSULATION AND SOUND CONTROL — SECTION — 10

Section Number 1/5 Catalog Number

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National Gypsum Co. 9/9; 10/30
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USG 9/13
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See Insulation—House

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X-Ray Protective

Bar-Ray Products, Inc. 10/53
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LEAD

Protective for X-Ray

See X-Ray—Protective Material

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House

See Insulation—House

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X-Ray Protective

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See Isolation—Machinery Vibrations

MAGNESIA

Pipe or Boiler Coverings

See Insulation—High Temperature

MATS

Cork—Machinery Foundation or Isolation

See Isolation Machinery—Vibrations

MINERAL

Wool

See Insulation—House—Wool

NAILS

X-Ray Protective

Bar-Ray Products, Inc. 10/53

ORNAMENTS

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PAINT

X-Ray Protective

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Metal Surfaced for Acoustical Treatment
See Acoustical—Materials and Treatments

X-Ray Protective
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Angier Corp. 10/1
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Fiberock Wall-Seal 10/27
Fibre-Skin 10/30
Insulite Co. 10/27
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Johns-Manville 10/14
Kimberly-Clark Corp. 10/15
National Gypsum Co. 10/30
Red Top 10/31
Roctex 10/30
Specialty Converters, Inc. 10/6
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Metal Faced Plywood
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Coverings
See Specific Type of Insulation

Insulation
See Insulation—Cold Storage; Insulation—High Temperature

Underground Insulation
See Insulation—High Temperature

PLANKS

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See Insulation—House—Board or Sheet Form—Fiber; Wallboard—Fiber

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Acoustical
(See also Acoustical — Materials and Treatments)
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Calicel 10/37
California Stucco Products Co. 10/36
Castacoustic 10/40
Celotex Corp. 10/37
Certain-teed Products Corp. 9/3; 10/23
Gold Bond 9/9; 10/30
Guastavino, R., Co. 10/40
Kalite 9/3; 10/23
Macoustic 9/9; 10/30
National Gypsum Co. 9/9; 10/30
Ohio Hydrate & Supply Co. 9/21
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Plastacoustic 10/40
Ritewall 9/21
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Base—Insulating
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X-Ray Protective
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PLASTIC

Acoustical
See Acoustical—Materials and Treatments; Plaster—Acoustical

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Isolation or Insulation of Vibrations
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Protective Materials
Bar-Ray Products, Inc. 10/53

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(Including: Brick or Fire Clay; High-alumina Silica; Chrome; Magnesite and other High Temperature Refractories)
Armstrong Co. 18/13
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See Insulation—House

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See Insulation—House

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See Insulation—House—Board or Sheet Form

SHEATHING OR SIDING MATERIAL
See Insulation — House; Wallboard—Fiber

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Bonded with Felt, Fabric, etc.
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Steel—Fabric or Felt Surfaced
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Robertson, H. H., Co. 6/34

Steel—Sound Deadened
RPM 6/34
Robertson, H. H., Co. 6/34

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—Insulation — House — Concrete — Ready Mixed or Precast
—Slabs 3

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Floor and Wall
See Insulation—House

Machinery Insulation or Vibrations
See Isolating—Machinery Vibration

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See Insulation—House

Quilted Felt
See Insulation—House—Blanket or Bat Form

Rock Wool
See Insulation—House—Wool

Sheet Steel
See Sheet Steel—Fabric Surfaced

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See Wallboard—Fiber

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See Wallboard — Fiber; Insulation—House—Board Form

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Acoustiwall 20/7
Air-Coustic 10/38
Audicoustone 9/25
Balsam-Wool 10/33
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Celotex Corp. 10/22; 10/37
Fir-Tex Insulating Board Co. 10/24
Hauserman, E. F., Co. 20/7
Insulite Co. 10/27
J-M 10/38; 20/6
Johns-Manville 10/38; 20/6
Lok-Joint 10/27
Masterwall 20/7
Nu-Wood 10/33
Quilt 10/9
Spray-Acoustic 10/18
Sprayo-Batt 10/18
Sprayo-Flake Co. 10/18
Transite 20/6
USG 9/13; 10/31
United States Gypsum Co. 9/13; 10/31
USG Resilient Sheetrock System 9/13
Wood Conversion Co. 10/33
Specifications 9/13; 10/9; 10/24; 10/27; 10/31; 10/33; 20/6; 20/7

SOUNDPROOFING

Doors and Windows—Strips for

Gail, G. W., Inc. 16/67
Pi-R 16/67

STRUCTURAL

Board

See Wallboard—Fiber

TANK

Linings

See Lagging—Tank

TILE FORM

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See Acoustical—Materials and Treatments

Cork

See Insulation—Cold Storage or Refrigeration

Fiber and Cane

See Tile form—Fiber and Cane. 11

X-Ray Protective

Bar-Ray Products, Inc. 10/53
Specifications 10/53

VENEERS

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VENTILATORS

Door—Lightproof

Bar-Ray Products, Inc. 10/53
Specifications 10/53

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See Isolation—Machinery Vibration

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See Acoustical—Materials and Treatments

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See Panels—X-Ray Protective

WALLBOARD

See Insulation—House

Acoustical

See Acoustical—Materials and Treatments

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See Wallboard—Reflective—Aluminum Foil Covered

Cement for

See Insulation — House — Setting Cement

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Bronzelite 10/27
Canec 10/29
Can-ite 10/25
Celotex Corp. 10/22
Celotex-Texbord 10/22
Cemesto 10/22
Certain-teed Products Corp. 9/3
Colorkote 10/24
DeLuxe PaneLboard 10/28
"E-C" Ivrykote 10/24
Ebonite 10/27
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FibreKote 10/49
Firkote 10/24
Fir-Tex Insulating Board Co. . . . 10/24
Flintkote Co. 10/25
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Marlite 11/33
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Marsh Wall Products Co. 11/33
Masonite Corp. 10/29
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Metal Covered

(See also Panels—Metal Surfaced; Wallboard—Reflective Type)
Ferroclad 15/23
Truscon Steel Co. 15/23

Reflective—Aluminum Foil Covered

(Including Gypsum and Fiber Board, etc.)
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Certain-teed Products Corp. 9/3
Gold Bond 9/9; 10/30
Gyplap 10/31
National Gypsum Co. 9/9; 10/30
Sheetrock 9/13; 10/31
Southern 9/16
Tomkins, Calvin Co. 9/15
USG 9/13; 10/31
United States Gypsum Co. 9/13; 10/31
Specifications 9/3; 9/9; 9/13; 10/30

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Silvercote 10/6
Specialty Converters, Inc. 10/6
Specifications 10/6

X-Ray Proof or Protective

Bar-Ray Products, Inc. 10/53
Specifications 10/53

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Composition Slab or Sheet

See Waterproofing—Protection Course—Composition, Fiber, Asphalt, etc.

Protection Course—Composition, Fiber, Asphalt, etc.

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Celotex Co. 6/5; 10/22
Eightfour 11/83
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WINDOWS

X-Ray Protective

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Specifications 10/53

WOOL

Mineral or Rock

See Insulation—House—Wool

X-RAY

Doors

See Doors—X-Ray Protection

Paint

See Paint—X-Ray

Protective Material

(See also Specific Products)
Bar-Ray Products, Inc. 10/53

Protective Louvers

See Louvers—X-Ray Protection

SECTION 10

ANGIER CORPORATION

Manufacturers of Modern Building Papers

FRAMINGHAM, MASS.

BROWNSKIN—A BUILDING PAPER OF SUPERIOR QUALITY AND PERFORMANCE

Before the advent of Brownskin, ordinary building papers were a weak link in the structural scheme. Brownskin, with its quality and performance, set a new standard.

Brownskin S/P (Sheathing Paper) is a multiple-ply combination of tough kraft paper impregnated with a special moisture-proofing bituminous material (specially developed for us by Prof. Robert E. Wilson of Massachusetts Institute of Technology) and a bonding asphalt layer separating each ply making the whole thickness integral and inseparable. A special creping process adds pliability, ability to expand and contract, ready bonding with plaster or stucco, and other advantages which make Brownskin unusually versatile.

Economy Brownskin (lightweight) is recommended for use where the demands upon it are not great, such as between rough and finished wood flooring.

Brownskin V/S (Vapor-Seal) is described on the following page.

Brownskin Creped Texture

Brownskin Specifications

Flash windows, doors and other exterior openings with 9″ (nine-inch) Brownskin continuous flashing before Brownskin S/P is applied. All exterior sheathing (or studs where no solid sheathing is used) shall be covered with a layer of Brownskin S/P stretched over the entire wall surface and nailed with large head galvanized nails before any siding, indicated in the plans or elsewhere in the specifications (as siding, clapboards, shingles, stucco or brick) is applied. All weather laps shall be not less than 2″ (2 inches). All Brownskin shall be carried over the studs, sills, heads and jambs of all openings and securely nailed.

Between all rough and finished floors, the contractor shall lay a single layer of Economy Brownskin, applied with the Brownskin side down. This paper shall be securely tacked to the under floor with large head galvanized nails. All seams shall be lapped not less than 2 in. (two inches). The Economy Brownskin shall be turned up at least 2 in. (two inches) under all baseboards or mouldings at the intersection of all floors and walls.

Superior Features

Brownskin S/P withstands a pull of 40 lbs. per lineal inch, and it requires a 100-pound blow to punch a hole 1½ inches in diameter through it. Brownskin, having a creped texture, is resilient and will stretch before rupture. This creping makes Brownskin a perfect backing-up material for all types of plaster and stucco work, bonding readily and firmly with the plaster. Brownskin S/P is moisture-proof. Submitted to a ground glass test for a month, it showed no sign of moisture penetration. Exposed to weather for a year, it showed no sign of deterioration or loss of moisture-proofing quality. Brownskin is resistant to all forms of fungoid growth and the attacks of boring insects. The toughness of Brownskin assures its application intact—rough handling, high wind, or nailing over an uneven surface. In every way, Brownskin is a product designed, manufactured and tested to last the life of the building.

Sizes of Rolls

Standard: 500, 1000 or 1200 square feet in 36, 40 and 48-inch width. Narrower widths to order in any required dimension.

Standard Narrow Widths: 125 square feet in 9-inch width for continuous flashing around doors, windows, etc. Also 250 square feet in 18-inch width for sheathing under cedar, redwood, and other hand-split shakes.

For estimate purposes, the price of Brownskin S/P (Sheathing Paper) is 1c per square foot, and of Economy Brownskin ⅔ of 1c per square foot.

COPPERSKIN—PURE LIGHT WEIGHT COPPER BONDED TO BROWNSKIN

Copperskin S/P (Sheathing Paper) brings the great merits of sheet copper into use for flashing and sheathing with the added advantage of toughness and easy application.

Copperskin is pure electrolytic copper in 1 to 3-ounce weights securely bonded to Brownskin of 1 to 3-ply grade. This effords all the advantages of Brownskin, as described above, with the permanence of copper.

Copperskin for flashing and drip pans under windows takes this necessary feature of house construction out of the heavy-cost class. Type 22 Copperskin can be easily folded into shape and tacked in place in a few minutes.

Copperskin V/S (Vapor-Seal) is a 100% barrier against passage of water vapor. Its use as such is described on the page to the right.

Specifications for Concealed Work Only

All exterior rough boarding, or other sheathing, on side walls, roof and elsewhere, as shown on drawings, shall be covered with Copperskin S/P, laid copper side out.

All courses and the ends of rolls shall be lapped at least 2″ (two inches) and held firmly in place with copper tacks.

Copperskin S/P shall consist of a continuous layer of Light Weight Sheet Copper bonded with a bituminous compound to a continuous layer of Brownskin S/P, as manufactured by ANGIER CORPORATION, Framingham, Mass.

Sizes and Grades

Standard Rolls: 30 inches by 120 lineal feet. Special grades and widths up to 60 inches will be made to order.

Superior Features

Copperskin S/P is permanently impervious to water, dust and air. It will not rot out and is proof against dry rot, fungi and vermin.

Copperskin S/P is extremely tough, may be handled freely without tearing, kinking or cracking, and may be formed by hand to fit into nooks and corners.

Type	*Approximate Cost per 100 sq. ft.
Type 11—1-oz. Copper—1-ply Brownskin	$ 5.00
Type 12—1-oz. Copper—2-ply Brownskin	6.00
Type 22—2-oz. Copper—2-ply Brownskin	9.00
Type 33—3-oz. Copper—3-ply Brownskin	14.00

*Cost per 100 sq. ft. is approximate and is quoted for estimate purposes. All prices are subject to change due to fluctuation in market prices for copper.

Brownskin and Copperskin are stocked by dealers in principal cities. If not obtainable locally, Angier will fill orders direct. A free supply of specification covers in Brownskin or a sample of Copperskin will be sent to architects upon request.

ANGIER CORPORATION

Manufacturers of Vapor-Seal Building Papers

FRAMINGHAM, MASS.

BROWNSKIN V/S AND COPPERSKIN V/S—EFFECTIVE AND PERMANENT BARRIERS AGAINST THE PASSAGE AND CONDENSATION OF WATER VAPOR INSIDE THE WALL AND ROOF SPACES OF MODERN BUILDINGS

The Problem and Its Damaging Results

Air conditioning, insulating and other recent structural developments bring about a new problem of condensation of water vapor within wall and attic spaces. If allowed to occur in modern tight construction, this accumulation of condensed moisture causes the possibility of stained ceilings and sidewalls, loosened plaster, decay of wooden members, decline of insulating value of moisture-absorbing insulation materials, and failure of outside paint jobs.

Just as the humid vapor of a room will condense on a cold glass of water, it also condenses in the cold space in a wall section after it has permeated the inner walls of a room. Plaster or wall board offers little resistance. The vapor, reaching its dew point when it meets the cool sheathing, condenses and soaks into many types of building materials and encourages the damaging results above mentioned.

Brownskin V/S and Copperskin V/S Provide a Permanent Barrier

The nature of both products are described on the page at the left. Copperskin V/S Type 12 is 1-ounce copper over 2-ply Brownskin. Brownskin V/S is a special heavier grade than that commonly used for sheathing purposes.

Copperskin V/S, being a barrier which is 100% protective against passage of vapor, is the ultimate and perfect material for the prevention of condensation in wall and ceiling spaces and consequent damage to structural materials.

Brownskin V/S gives a protection against penetration of water vapor in an efficiency of 94% and is therefore entirely practical, yet considerably lower in cost than Copperskin V/S. The amount of vapor which will pass through Brownskin V/S and condense during a period of 24 hours is so slight as to be negligible—about ¼ of a gram to each 100 square feet of Brownskin.

How They Are Applied

Either Copperskin V/S or Brownskin V/S is laid directly over the studding on the warm or inner side of the wall section and directly under the plaster base. In ceilings it is laid on the under side of joists. Copperskin V/S, where there is no insulation, or where there is a space between it and the bat or blanket type of insulation, should be laid with the copper surface facing away from the room. Where the wall section is completely filled with insulation, the copper surface should face toward the room.

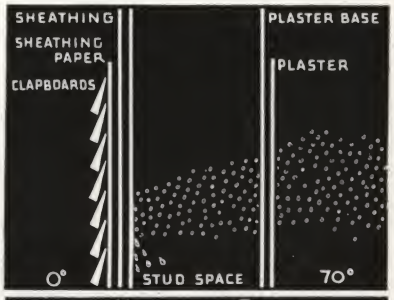
Both products should be laid to run with the studs, joists or rafters so that the lengthwise seams lap by 2 in. on these members. Transverse seams should be lapped over transverse cross members. Seams should be wiped with mastic and nailed with large head copper tacks about 2 inches apart.

Standard Types

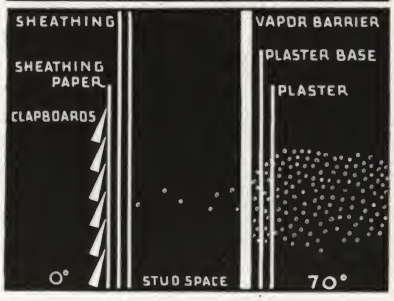
Copperskin V/S is Type 12 as described on the page at the left. Standard rolls of 300 square feet and 34 and 38-inch widths for lapping over studs on 16 or 18-inch centers. Standard rolls 42 inches—300 square feet—allow for lap over rafters on standard 20-inch centers. Approximate price, for estimating purposes, is 6c per square foot.

Brownskin V/S is available in standard rolls of 500 square feet and 34, 38 and 42-inch widths for lapping without waste over studs or rafters. Narrower widths are available in rolls 9 inches by 167 lineal feet—125 square feet—and in 18 inches by 167 lineal feet—250 square feet. Approximate price for estimating purposes is 1c per square foot.

Brownskin V/S and Copperskin V/S are stocked by dealers in principal cities. If not obtainable locally, Angier will fill orders direct. A free supply of specification covers in Brownskin V/S and sample of Copperskin V/S will be sent to architects and builders on request.



The top diagram shows how lack of vapor barrier allows vapor to pass through the walls and condense on the inner surface of sheathing boards.



The lower diagram shows how Copperskin V/S or Brownskin V/S effectively prevent this damaging condition.

The presence of insulation makes the outer or sheathing side of the wall even cooler than when no insulation is used and greatly increases the amount of condensation that may collect. An effective vapor barrier so reduces the amount of vapor in the wall section that condensation is minimized and produces no deteriorating effect.

THE SISALKRAFT CO.

205 West Wacker Drive, CHICAGO, ILL.

NEW YORK, N. Y., 101 Park Avenue SAN FRANCISCO, CAL., 55 New Montgomery Street

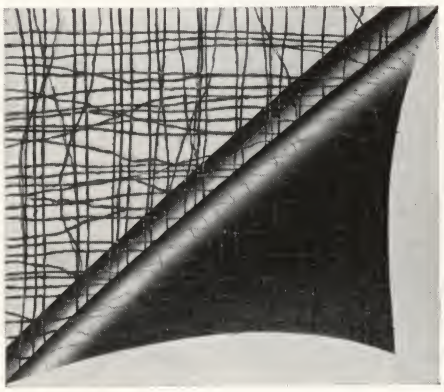
IN CANADA: ALEXANDER MURRAY & COMPANY, LIMITED—Montreal, Toronto, Saint John, N. B., Halifax, Winnipeg and Vancouver

SISALKRAFT

PRODUCTS:

(1) Sisalkraft—A strong, waterproof, windproof building paper reenforced with sisal fibres and pre-treated to resist shrinkage and fungus rot.

(2) Copper-Armored Sisalkraft—A combination of Sisalkraft and Anaconda electro-sheet copper. Available in 3 weights of 1, 2 or 3 oz. copper per sq. ft.



SISALKRAFT is 6 Ply
2 sheets of pre-treated kraft
2 layers of special asphalt
2 layers of crossed sisal fibres

PURPOSE:

The importance of good building paper is not always appreciated by an owner or builder. But the architect knows the protection it gives to a building cannot be overestimated, even though its cost is a comparatively small part of the building investment. The architect knows, too, building paper cannot be efficient if it rips and tears in application; or is perforated by nailholes because of a need for battening it in place; or dries out and otherwise disintegrates after the building is completed.

Sisalkraft is a building paper with all the qualities an architect expects when he specifies a strong, waterproof, windproof sheet with a long life.

ARCHITECTURAL ADVANTAGES

Water-Wind-Moisture-Proof—The double layer of special asphalt is a positive stop to air and moisture infiltration—even with abnormal wind pressure. The asphalt is protected from drying and oxidation by pre-treated kraft cover sheets. It retains its quality indefinitely.

Strong and Tough—Sisal fibre reenforcement prevents tears or rips in Sisalkraft when it is handled quickly or carelessly. High winds cannot damage it. No battens are necessary to hold it in place—that eliminates holes left in a paper when battens are removed. Nails are completely sealed around their shank by the asphalt which clings to them. This prevents leaks around the nail holes.

Sisalkraft reenforcement is ideal because sisal fibres, like paper, are non-elastic and will not permit any strain to stretch and break the paper. The crossed fibres are evenly distributed, so that every nail, no matter where it is driven through Sisalkraft, gives absolute resistance to movement in any direction. All of the sisal fibres are completely embedded in asphalt. They do not come in contact with the kraft cover sheets; thus preventing the conduction of moisture into the sheet.

Resists Shrinkage and Dry Rot—The tough kraft cover sheets of Sisalkraft are given a special pre-treatment before combining which makes Sisalkraft practically shrinkproof. This treatment, in addition, also makes Sisalkraft highly resistant to bacteria and fungus rot.

Flexible—Sisalkraft is easily bent around corner posts, heads, sills and jambs of openings; or carried over ridges and down into valleys without cracking. Bent up under baseboards when used under flooring, it provides a cold air stop and eliminates the back painting of baseboards.

Smooth Surface—Hardwood floors can be crowded into place over Sisalkraft without causing a bunching or creeping of the paper.

Economy—Sisalkraft is inexpensive. Its cost is approximately $1.10 per hundred square feet. Thus, the total cost for Sisalkraft protection in a home represents a very small part of the total investment. Using cheaper, flimsier papers will not save much in first cost, and their inefficiency makes their ultimate cost very high.

HOW ARCHITECTS ARE SPECIFYING SISALKRAFT

Sisalkraft has a wide variety of uses in buildings of all types—from small bungalows to large commercial and industrial buildings. The following typical specifications show how architects are specifying it in some of the more common applications.

Outer Walls—All sheathing shall be covered with a layer of Sisalkraft (as manufactured by THE SISALKRAFT Co.). The paper shall be applied horizontally, using large-head galvanized nails, with weather laps of at least four (4) in. (Where shingles are specified it shall be applied directly to the sheathing and not between shingles.) It shall be carried over the studs, sills, heads and jambs of all openings and around all corner posts a distance of not less than nine (9) in. away. Apply no more paper at a time than will be covered that same day. *(Note:* Stained shingles, wherever specified must be thoroughly dry before they are applied.)

All exposed brick walls are to be dampproofed with a layer of Sisalkraft applied vertically in the thirty-six (36) in. width, the paper to be lapped two (2) in. and carried out over the subfloor a distance of one foot. Thereafter apply the furring strips for lathing on sixteen (16) in. centers.

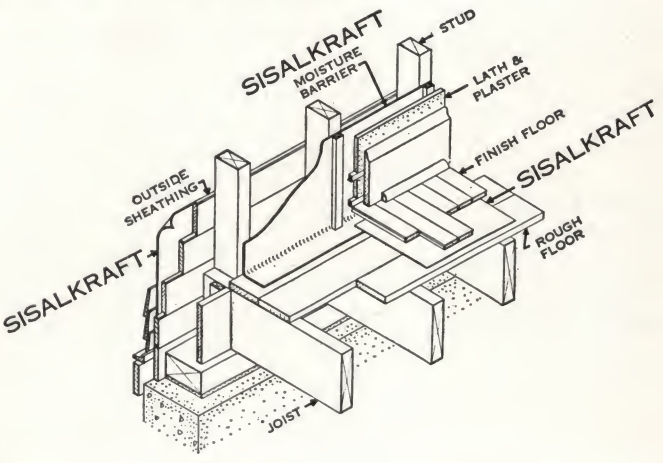
Flooring—Over all subfloors, Sisalkraft (as manufactured by THE SISALKRAFT Co.) is to be applied in the widest widths practicable. It shall be applied to run at right angles to the direction of the finish strips and is to be lapped not less than four (4) in. Sisalkraft shall be bent up at the baseboards at least four (4) in. and the baseboards brought down over it to provide a cold air stop.

Roofs—Over all roof decks (wood) Sisalkraft (as manufactured by THE SISALKRAFT Co.) is to be applied using the thirty-six (36) in. width and applying no more than will be covered that same day. Apply horizontally, using large-head galvanized roofing nails with weather laps of not less than four (4) in. Carry the Sisalkraft over all hips and ridges and carry it down to the bottom of all valleys and up for a distance at least eighteen (18) in. on each side of these valleys. *(Note:* Wherever stained shingles are specified they must be thoroughly dry before application.)

SISALKRAFT AS AN EFFECTIVE MOISTURE BARRIER

Humidifying the air by air conditioning or other means has created the problem of preventing the passage of moisture vapor into wall and roof spaces where it condenses and sets up the hazard of rotting. Various authoritative sources have shown through tests that condensation can be prevented by a vapor seal applied behind the plaster base. Sisalkraft is the ideal barrier for this purpose because of its extreme resistance to moisture, its lifetime protected asphalt, and because of its tough, sisal re-enforcement—as a moisture barrier must present an unbroken surface, else it has little value.

Send for A.I.A. File No. 19-G, which contains complete information and specifications.



SISALKRAFT FOR CONCRETE CURING

The Sisalkraft method of curing concrete provides a positive means of securing strong, dustless concrete—easily and at low cost. Sisalkraft curing is so automatic that you can be sure of perfectly cured concrete without the need of personally overseeing a job—when the Sisalkraft is put in place, the curing problem is settled. Sealing the original mixing water in the concrete with Sisalkraft until complete curing has taken place, has other advantages besides assuring higher quality concrete. (1) It eliminates the expensive handling of loose

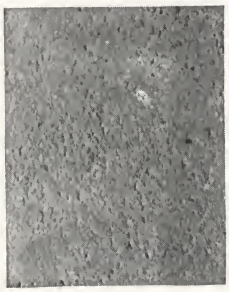
materials like sand, sawdust and straw, and their disposal after being used. (2) It does away with the "guesswork" of sprinkling at proper intervals with uniform distribution of water and the labor costs involved in that method. (3) It allows work to be carried on over a newly laid floor. (4) It protects the surface from construction stains, dirt and debris while curing is taking place and as long afterwards as you want.

It is a well-known fact that there is more than ample water in newly laid concrete to provide maximum strength, density and hardness if it can be kept there until every particle of cement has been hydrated. By covering the surface with this waterproof and airproof sheet, Sisalkraft, the evaporation of the mixing water is so greatly retarded that this chemical reaction in the concrete is bound to take place—and without any attention being paid to it.

It is easy to check up on this method of curing. Either the paper is in place or it is not. A visual inspection settles that point immediately. If the paper is in place the cure is being effected automatically. No further test or inspection is necessary to insure results.

The high quality of concrete produced by Sisalkraft curing is attested by ample experience as well as by numerous tests. The accompanying illustrations show the increased resistance to surface wear produced by Sisalkraft curing. The chart shows comparative density and hardness as measured by compressive strength tests. Write for more details and samples.

This concrete block was cured with Sisalkraft. It has undergone a severe sandblasting test with practically no damage



Here is shown concrete out of exactly the same mix as that pictured at the left, the only difference being that it had no protection from rapid drying. Note how badly the same sandblasting damaged the surface

STANDARD SPECIFICATIONS FOR CURING AND PROTECTING CONCRETE BY THE SISALKRAFT METHOD

Concrete—Floors, Roofs and Paving Curing and Protecting

As soon as the floors may be safely walked upon, and before any traffic is allowed or work done over them, they shall be covered with one layer of Sisalkraft as manufactured by THE SISALKRAFT CO. This paper shall be applied in the widest practicable widths; to be lapped at least four (4) inches and sealed with a waterproof cement as directed by the manufacturer of the paper.

All concrete floors, roofs and paving, both indoors and out, are to be protected and cured as above noted.

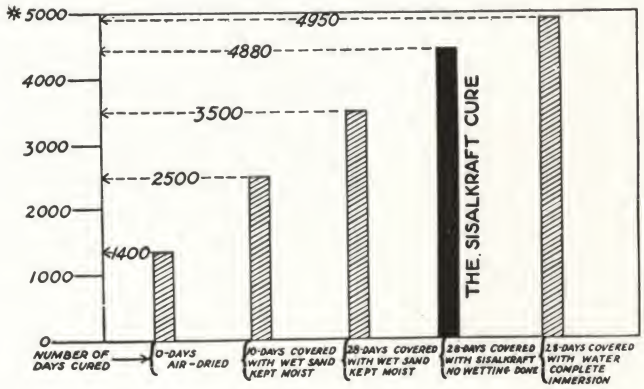
On floors specified to receive linoleum, the paper shall remain in place until all danger from construction dirt and spill is past. On outside work, the paper shall remain in place for not less than ten (10) days. On cement finish floors, the paper is to be maintained in good condition upon the floors until the building is ready for the final inspection.

Terrazzo Work—Curing and Protecting

Terrazzo is to cure at least six (6) days before grinding. During this period it shall be covered with one layer of Sisalkraft as manufactured by THE SISALKRAFT CO. This paper is to be laid with as few joints as practicable; joints to be lapped at least four (4) inches and securely weighted down. After final grinding and polishing the paper is to be relaid with the laps sealed with waterproof cement and maintained in good condition upon the terrazzo work until the building is ready for the final inspection.

Results of Various Concrete Curing Methods

*Scale of Density and Hardness as Shown by Compressive Strength in Pounds per Square Inch



Note: The results charted at left are taken from authoritative sources. The first three are reported in the booklet "Design and Control of Concrete Mixtures," published by the Portland Cement Association and the other two were obtained in tests made by H. F. Gonnerman, manager of research laboratory, Portland Cement Association, published in the Journal of the American Concrete Institute. The air-dried and sand-cured specimens were tested at the age of four months while the Sisalkraft-cured and water-cured specimens were tested at 28 days, a fact which still further emphasizes the difference in compressive strengths shown. The Gonnerman figures are the average of four tests made on different days, using 6 x 12-in. cylinders.

COPPER-ARMORED SISALKRAFT

For hundreds of years pure copper has been known as one of the most durable, workable, and protective metals, *but,* the use of copper in thickly rolled sheets has been limited because of high cost. Today, electro-deposits of copper on lead drums produce thin sheets of pure copper, free from pinholes, in any width up to 60 inches. A perfect, thin sheet of copper is just as impermeable to water or moisture as a thick sheet. Thus, the protective value of copper—thick or thin—in concealed uses is dependent upon intact application, not upon weight.

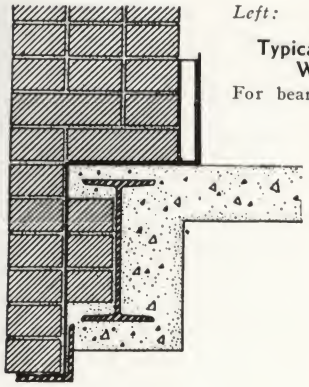
Thin sheets of copper need reenforcement for handling, and to assure undamaged application. The entire problem is answered in Copper-Armored Sisalkraft.

Copper-Armored Sisalkraft is a perfect combination—thin sheets of pure electro-deposit Anaconda copper are bonded under heat and pressure with tough Sisalkraft. It is flexible—will not kink or crack.

The non-elastic sisal reenforcement of Sisalkraft gives copper the necessary strength to insure rapid and undamaged application.

Copper-Armored Sisalkraft is inexpensive. That's why it is becoming increasingly popular. Greatly varied problems in water and moisture-proofing are solved by Copper-Armored Sisalkraft. It is the new way—the economical way—to durable, positive copper protection!

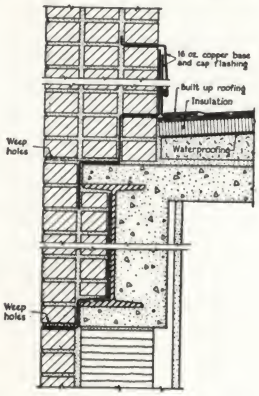
SOME TYPICAL COPPER-ARMORED SISALKRAFT USES



Left:

Typical Spandrel Beam Waterproofing

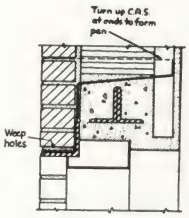
For beams less than 15 in.



Left:

Typical Spandrel Beam Waterproofing

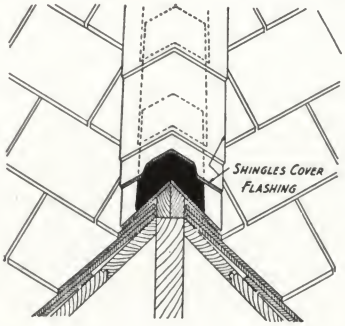
For beams over 15 in.—showing roof and parapet walls



Above:

Typical Head Flashing

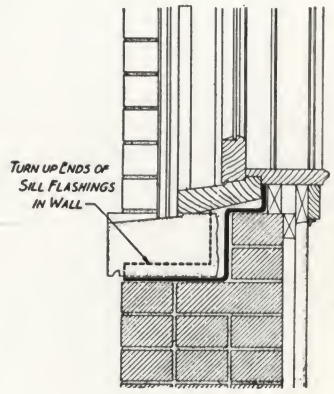
Where windows are not directly under the spandrel beam



Left:

Ridge Roll Flashing

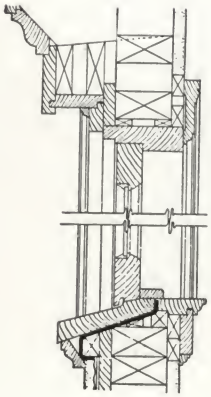
Copper-Armored Sisalkraft Concealed Flashing eliminates roof leaks at this vulnerable spot



Left:

Flashing Stone and Brick Sills

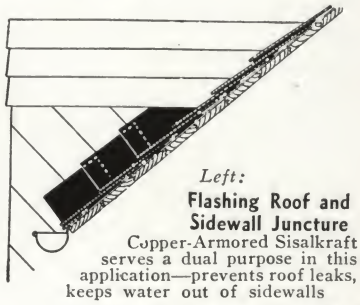
Copper-Armored Sisalkraft affords positive protection against driving rain and seepage at this construction point. Ends of the flashing are turned up on both ends of the sill as shown



Left:

Application for Stucco Walls

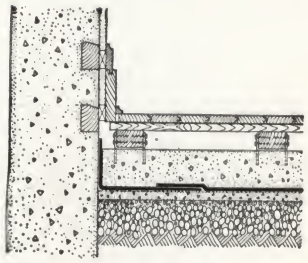
Copper-Armored Sisalkraft keeps water from entering the sidewalls around all windows and doors—adequately solving this tough problem of protection



Left:

Flashing Roof and Sidewall Juncture

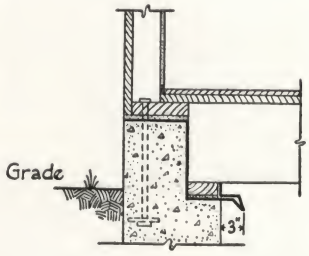
Copper-Armored Sisalkraft serves a dual purpose in this application—prevents roof leaks, keeps water out of sidewalls



Above:

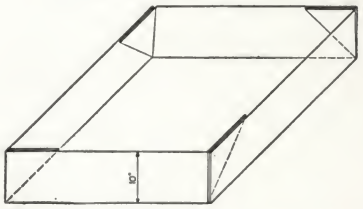
Floors at or Below Grade

Wood floors, or linoleum are effectively protected by one layer of Copper-Armored Sisalkraft installed in the manner shown. Mastic is used only at the laps and at the turn up on walls



Left:

Many residences are built to hug the ground and often the foundation sills are 18 in. or less above grade level. A damp course of Copper-Armored Sisalkraft as shown will prevent moisture from entering the sills. Mastic is used only to seal the punctures where the bolts go through and to seal any laps. Where there may be danger from termites, the copper extends beyond the foundation, as shown in the drawings



Above:

Copper-Armored Sisalkraft Used to Damp-proof Shower Stalls

Copper-Armored Sisalkraft is folded and lapped at each corner and turned up to form a pan without a break in the material or corner openings

Write for Samples and Folder for Your File

ALFOL INSULATION COMPANY, INC.

GENERAL OFFICE
155 East 44th Street, NEW YORK, N. Y.
CHICAGO OFFICE: 135 So. La Salle Street

ALFOL INSULATING BLANKET

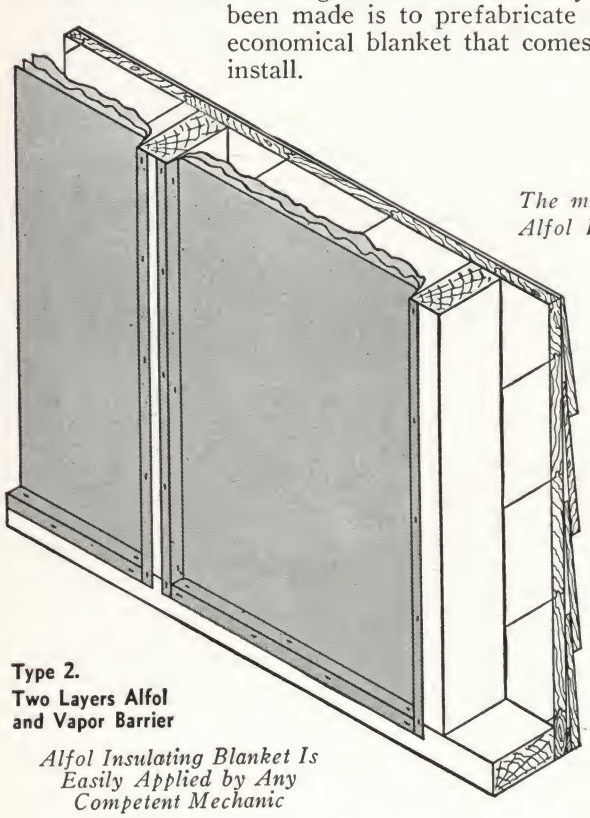
To meet a steadily growing demand, the Alfol Insulating Blanket has been developed after extensive study of the thousands of Alfol (Aluminum foil insulation) installations made during the past number of years.

In these newly perfected blankets, Alfol Insulation is made available for the first time through established sources handling building materials in "packaged" form. Ready-to-install, these blanket units are easily and rapidly applied to a structure by any competent mechanic. Their design provides a fool-proof method of installation which does not require specialized knowledge of insulation application.

Alfol Insulating Blankets are sized in width to fit standard stud spacings without alteration. When removed from their shipping cartons, they are ready to be fastened into place. The only tools needed are either an ordinary hammer or a hand-stapler, and a pair of shears to cut the blankets to fit odd shaped spaces.

By substantially reducing the time and labor required for installation, these ready-to-install blankets now bring Alfol's many recognized insulating advantages within the budget of even the moderately priced small house. The "feather-weight" blankets are easily handled and rapidly applied. No time is lost in adapting or fitting them to the job.

Alfol Insulating Blankets provide the same high thermal efficiency, low heat storage capacity, moisture-proof vapor barrier, and low weight which have gained Alfol international acceptance and use for the insulation of buildings, railroad, marine and bus transportation equipment, boilers and pipe lines, refrigeration, and the insulation needs of the U. S. and foreign navies. The only change which has been made is to prefabricate a simple, fool-proof, economical blanket that comes to the job ready to install.



The method used in installing Alfol Insulating Blankets creates an additional air space between the insulation and the lath; this adds insulating efficiency and allows plaster to dry quickly and evenly.

Type 2.
Two Layers Alfol and Vapor Barrier

Alfol Insulating Blanket Is Easily Applied by Any Competent Mechanic

ALFOL ADVANTAGES

High Thermal Efficiency—Type 1 Alfol Insulating Blanket adds an insulating effect equivalent to house wall transmittance of .12 B.t.u. per sq. ft., per hour, per degree F. temperature difference. Because Alfol insulates by reflecting radiant heat, its insulating effect is instantaneous.

Does Not Store Heat—Alfol hastens the heating of rooms in winter because Alfol instantaneously reflects the supplied heat back to its source. In summer Alfol insulated surfaces cool rapidly because Alfol provides almost no capacity for absorbing and storing heat.

Permanent and Durable—Alfol cannot warp, settle, bulge, rot or disintegrate. Years of exposure under adverse conditions have proved its durability and lasting insulating efficiency. It will not tarnish.

Moisture-Proof and Water-Proof—Alfol seals against moisture and water and will not absorb them. It creates its own impermeable vapor barrier and safeguards against water leaks, wall "sweat" and damage to wall decorations from moisture penetration.

Clean and Sanitary—Alfol is metal, and is clean in application and in use. It will not harbor or feed termites, vermin or rodents.

Economical—Alfol increases heating efficiency and reduces fuel costs by its high thermal efficiency, its instantaneous insulating effect, and its very low capacity for heat storage. It is durable and permanent.

Made in Two Types—Type 1, with single Alfol layer; Type 2, with two Alfol layers. Both types have vapor barrier.

Specifications of Both Alfol Types

Widths:
For stud spaces up to 16 in. on center.....15 in. x 9 ft.
For stud spaces up to 20 in. on center.....19 in. x 9 ft.
For stud spaces up to 24 in. on center.....23 in. x 9 ft.
Weight (approx.) per blanket.....¾ lb.

Ferro-Therm

METAL INSULATION FOR HOMES

AMERICAN FLANGE & MANUFACTURING CO., INC.
30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

HOGAN AND COMPANY, NATIONAL DISTRIBUTORS
383 MADISON AVENUE • NEW YORK, N. Y.

THE NECESSITY OF BUILDING INSULATION IS *GENERALLY ACKNOWLEDGED*

Apt. House, N. Y. City, Insulated with *Ferro-Therm*
Arch. H. I. Feldman

Bank Buildings, Insulated with *Ferro-Therm*
Arch. Randolph H. Almiroty

Within recent years a great amount of thought and study has been given to the problem of thermal insulation for residential construction.

Insulation has played an important part in industry for many years but consideration of its application and its importance in home construction has had a slow advancement.

The introduction of air conditioning and the necessity of reducing the cost of heating with modern fuels such as oil and gas have resulted in the development of insulation.

Proper Protection of a Building Against Heat Losses Necessitates:

Insulation—As it has been found that the greatest losses are through the walls and roof, these areas must be constructed with proper insulating materials.

Reduction of Infiltration—Good construction of walls, floor and roofs and proper fitting or weatherstripping of doors and windows to eliminate infiltration of air.

Insulation Reduces:

Heat losses in Winter—and therefore the cost of fuel.

Size of the heating plant required—A smaller boiler and less radiation is required in a well insulated house.

Insulation Produces:

Uniform Winter warmth and comfort in the house—Drafts and cold floors are eliminated.

Coolness and comfort in the house in Summer—The intense Summer heat cannot penetrate through insulated walls and roof. The entire house is cool and comfortable day and night.

A sound investment—The saving in fuel pays for the entire cost of insulation within two to five years and this saving continues for the life of the house. You save money at the same time that you are enjoying the comfort of an insulated home. On the other hand, an uninsulated home costs more to heat and does not give you the comfort. Lack of insulation costs money and comfort.

Increased original and resale value of a house—The value of a house is greatly increased when it is insulated. The use of insulation in fine residences is now practically universal and is demanded by real estate interests. It is therefore essential that insulation be given the utmost consideration in order to protect your investment.

Correcting Some Old Impressions Regarding Insulation

For years it was thought that it was necessary to have thick mass materials depending on the multitude of minute dead air cells that were contained in the mass.

This practice has been found to have certain disadvantages which have been eliminated by modern facts and practice in insulation.

Heat Travels By Means of Three Mediums

Conduction—the transfer of heat from molecule to molecule in materials that are in direct contact with each other.

Convection—the transfer of heat by means of circulating currents which carry the heat, such as circulating air currents.

Radiation—the transfer of heat by means of electromagnetic waves which carry heat energy.

Radiated Heat Most Important Factor

Of the three mediums, radiation is responsible for 66 to 85% of the total heat transfer as shown in diagram at right.

Of all common metals which have been found to reflect a high percentage of radiated heat, steel is one of the most efficient and practical as well as the strongest and most durable.

Steel reflects a high percentage of radiated heat. This means that the major portion of the total heat does not penetrate the surface of the steel at all but instead it is reflected back toward its source.

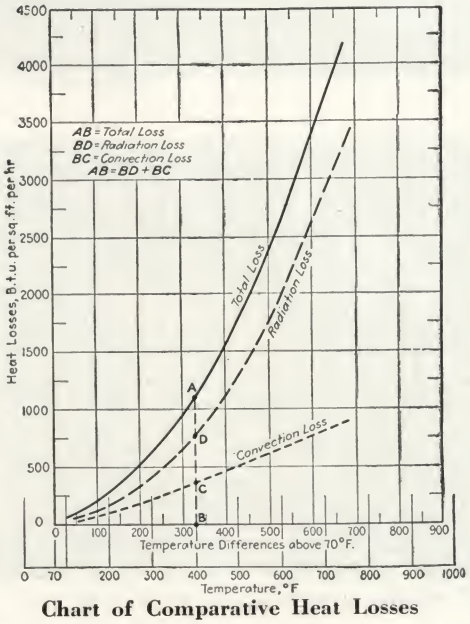


Chart of Comparative Heat Losses

A bright mirror-like surface is not necessary for steel to maintain this high reflectivity of heat. Heat rays and light rays are entirely different in this respect. A looking glass which is the best reflector of light reflects practically no heat at all. The molecular structure of the surface is the important factor and comparatively dull steel surfaces will reflect heat as efficiently as brightly polished surfaces.

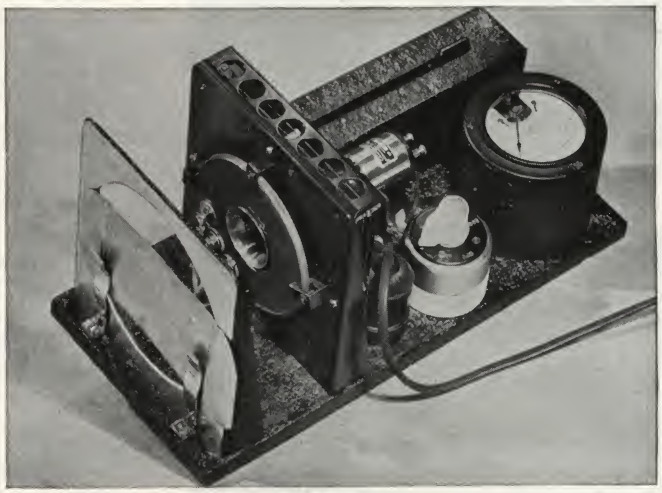
Modern Theories and Practice in Insulation

The Reflectivity of Heat Actually Demonstrated on a Reflectometer

The illustration below shows a reflectometer which consists of an electric heater operating at approximately 400 degrees Fahrenheit radiating heat against the material to be tested which is held in a frame a few inches from the heater. The heat that is reflected from this material is thrown back through a funnel against a thermopile, where the reflected heat energy is turned into electrical energy and recorded on an ordinary galvanometer.

A material of known reflectivity to heat, as given by the International Critical Table, is placed in the frame and the amount of heat reflected is recorded on the galvanometer. Then steel or other metals are placed in the frame, and the recording of the galvanometer shows exactly the percentage of heat that they reflect.

Materials other than metals reflect little or no radiated heat but instead absorb this heat which is carried on through them by conduction. With such non-reflecting materials it is necessary to have a mass of the substance to retard this heat that is absorbed from being conducted on through the material. Old type mass insulation materials worked on this principle employing a multitude of dead air cells in their structure to prevent this conduction.



The Reflectometer which Demonstrates the High Reflectivity of *Ferro-Therm*

Modern steel insulation does not absorb this heat at its surface, therefore it does not need this mass to prevent the heat from passing on through. The dead air space maintained after installation prevents the remaining portion, conducted and convected heat from passing through.

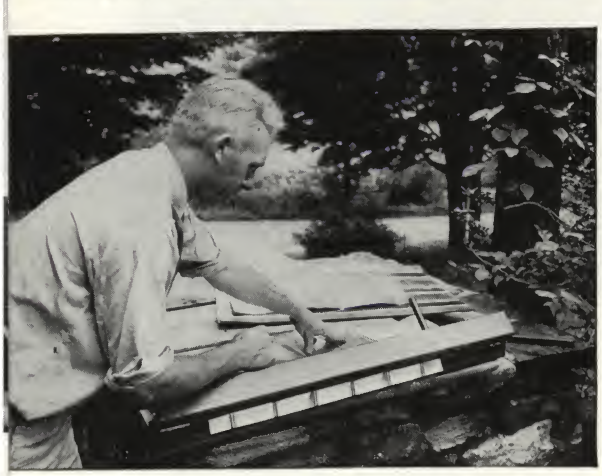
Ferro-Therm

(Registered Trade Mark)

Ferro-Therm Fully Covered by Patents

Ferro-Therm **as It Comes to the Job**

Cutting Five Sheets of *Ferro-Therm* at One Time



Flanging Five Sheets of *Ferro-Therm* after Cutting

Sheet Steel Insulation

Ferro-Therm is a steel sheet insulation which *reflects* 95% of all radiated heat which strikes it from either side. This high reflectivity is effective throughout the entire range of temperature from sub-zero up to 1000°F. Thus, in Winter, heat inside the building is reflected back into the building from the walls and roofs, thereby reducing heat losses. In Summer, the heat waves from the sun are reflected back by Ferro-Therm from the walls and roof of the building, preventing the heat from entering the building.

Ferro-Therm sheets are especially prepared and cleaned of all scale or foreign matter. This leaves a smooth dull surface and a reflectivity of 95%, which is due to the *molecular construction* and not to the polish of the surface.

Its Non-Corrosive Alloy Coating

Naturally the first thought is to protect the clean surface from corrosion. This is accomplished by coating it with an alloy of lead and tin which completely protects it against corrosion. This coating does not detract from the reflectivity of the steel plate whereas lacquers or paints of any kind or color would reduce the same plate so treated to 30% of its true value.

Delivered in Handy-Sized Sheets

Ferro-Therm is made in sheets 24 x 32 inches and in 0.006 of an inch thickness, making it easy to handle as it weighs only 0.25 lbs. per square foot. It is packed flat, 600 sq. ft. to a box. Each box is identified with the American Flange & Mfg. Co. trade mark as illustrated above.

Crimped for Extra Stiffness

On account of the lightness of the metal the sheets are crimped at 4-inch intervals in order to stiffen the sheets when in place, and to make them easy to handle on the job.

Made to Fit Standard Spacing of Studs

The sheets are of such a size that they are adaptable to either 12 or 16 inch spacing of studs without waste, or to 20 inch spacing of roof rafters with slight waste.

The sheets are delivered flat and are then cut on the job to fit the spacing of the studs. Half the 32 inch dimensions of the sheet, or 16 inches, allows for the bending of a flange on each side for stapling between studs 16 inches on centers. Half the 24 inch dimension, or 12 inches, allows for the flange for stapling between studs on 12 inch centers.

Cutting and Flanging the Sheets

The sheets of metal are thin, and five sheets can be cut at a time by a knife cutter, similar to a large paper cutter, as shown in the illustration.

The flanged edges are made on the sheets with a simple brake, and 5 sheets can be quickly flanged at the same time. The metal can readily be cut to fit any special shape.

Installation by Carpenter

The entire installation of Ferro-Therm is done by carpenters.

AMERICAN FLANGE

METAL INSULATION

ADVANTAGES OF *Ferro-Therm*

1. Reflects 95% of all Radiated Heat

As the greatest losses of surface heat have been found to be by radiation, the fact that Ferro-Therm will reflect 95% of radiated heat is of the utmost importance in considering insulation.

2. Has a Dull, not Polished Surface

The surface of Ferro-Therm is a smooth dull surface rather than a highly polished light-reflecting surface such as a mirror. Actual tests on the reflectometer show that Ferro-Therm reflects just as much heat when it is dull as when it is bright.

3. Protected Against Corrosion or Deterioration

The coating of lead and tin alloy assures a perfect protection for the steel against corrosion due to any ordinary atmospheric conditions in the wall or roof construction.

4. Does not Absorb Moisture

Being a non-absorbent and corrosion resisting metal, Ferro-Therm will not absorb moisture. Therefore, the high efficiency of Ferro-Therm is not decreased as is the case in other insulation materials that do absorb moisture. Furthermore the reflection of heat by the Ferro-Therm sheets actually keeps the air space warm and dry. This serves to keep the plaster of the walls and ceiling dry, thereby preserving the plaster decorations.

5. Does not Settle or Pack Down

Ferro-Therm cannot settle or pack down because the steel sheets are stapled permanently in place. Loose mass types of insulation do settle and pack down from vibration and gravity and their efficiency decreases accordingly. Ferro-Therm cannot be affected in this way.

6. All Metal, Non-Combustible

Ferro-Therm is all metal, with strength and rigidity and is non-combustible. Ferro-Therm being of steel affords a very definite fire stop.

7. Vermin-Proof

Being metal, Ferro-Therm will not support or harbor vermin. Termites, rodents and insects cannot penetrate Ferro-Therm.

8. Light in Weight

Ferro-Therm weighs only 0.25 lbs. per square foot with a thickness of 0.006 inches or United States gauge No. 38.

9. Not Readily Damaged

Ferro-Therm has the structural strength and stiffness of steel and is not easily damaged.

10. Easily Handled and Installed

Being light in weight and in small sheets the insulation is easily handled on the job. Five sheets are generally cut at a time on account of the thinness of the metal. A carpenter can install on an average of from 600 to 800 sq. ft. a day in an ordinary frame house construction.

11. *Ferro-Therm* Affords Definite Fire Protection

Due to the fact that Ferro-Therm is steel which will not burn and will reflect heat above 1000°F. the wood framework of the house inside the Ferro-Therm is protected from the penetration of fire for a reasonable period.

12. Protects Studs from Dry Rot

Protection of house construction prevents rotting from moisture. Ferro-Therm cannot absorb moisture from the air and therefore does not convey any moisture to the frame work which would cause the wood to rot. The air space maintained by the method of installation of Ferro-Therm also eliminates any chance of dry rot.

Installing *Ferro-Therm* Sheets Over Attic Beams

Installing *Ferro-Therm* Between Ceiling or Floor Beam

Installing *Ferro-Therm* in Frame Wall

THE INSTALLATION OF *Ferro-Therm*

(Registered Trade Mark)

Ferro-Therm Fully Covered by Patents

The Cutting Tool for *Ferro-Therm*

Brake for Forming Flanges on *Ferro-Therm*

Magazine Stapling Hammer for Installing *Ferro-Therm*

Ferro-Therm is delivered to the job in cases containing 112 sheets standard size 24 x 32 inches.

The light weight, convenient size, and lack of bulk makes handling and storage of Ferro-Therm very simple.

Cutting Sheets

The first operation is to cut the sheets of Ferro-Therm if they are to be installed between studs or rafters. For 16-in. center studs the sheet is cut in half on the 32-in. dimension making 2 sheets 16 x 24 ins. For 12-in. center studs the sheet is cut on the 24-in. dimension making 2 sheets 12 x 32 in. The sheets are cut on a cutting board similar to a large paper cutter. Five or six sheets may be cut at one operation.

Flanging Sheets

After cutting, the edges of the sheets are flanged from ½-in. to 1-in. depending on the exact spacing of the studding. The flanging is done on an ordinary brake consisting of two 2 x 4's hinged together, one of them being fastened to the floor or bench. The sheets are put between the 2 x 4's with the desired flange dimension extending through and then the free 2 x 4 is turned over flanging the sheet as it does so.

Installation of Furring Strips

Ordinary wood lath or ½-in. furring strips are cut in lengths to fit between the studs. These are nailed to the inside face of the wood sheathing between the studs, starting at the floor and spacing the lath every 24 or 32 inches depending on the length of the sheets of Ferro-Therm.

The sheets of Ferro-Therm are then stapled to the lath overlapping the sheets approximately 1 inch. The sheets are also stapled directly to the studs, stapling them through the flanged edges. By installing Ferro-Therm in this manner a definite series of dead air spaces or blankets is maintained between the sheets and the sheathing.

Installation Tools

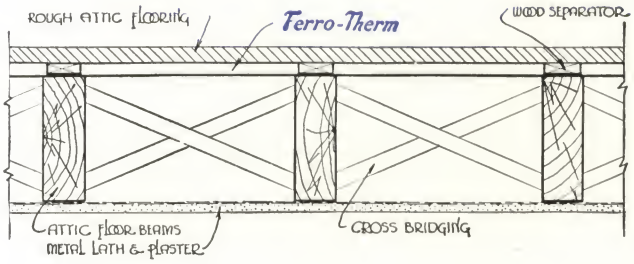
Stapling is done by means of automatic stapling hammers which hold approximately 100 staples in a magazine. This speeds up the installation.

Cutting boards, flanging machines and stapling hammers are available on loan from the American Flange and Mfg. Co.

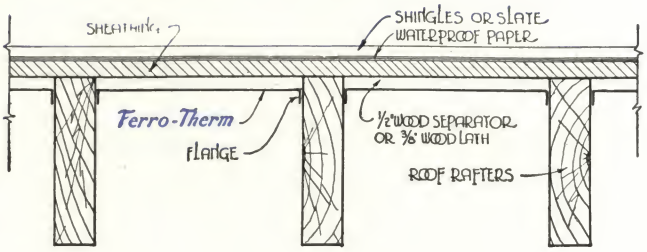
Installation of *Ferro-Therm* Over a Second Floor Ceiling

It is also practical to install the sheets flat on the face of the ceiling joists. This is the common practice where the attic is to be left unfinished with no flooring. In this method each sheet spans two joists and is stapled directly to the face. If a floor is desired later it is simply necessary to nail furring strips along the joists over the Ferro-Therm and then apply the flooring directly on the furring strips.

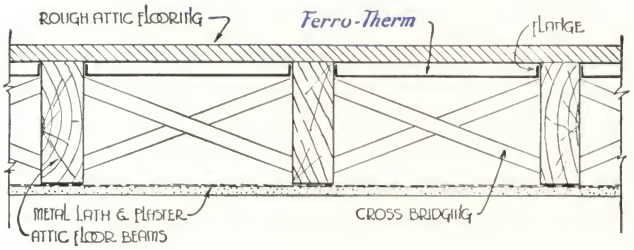
TYPICAL DETAILS FOR INSTALLING *Ferro-Therm*



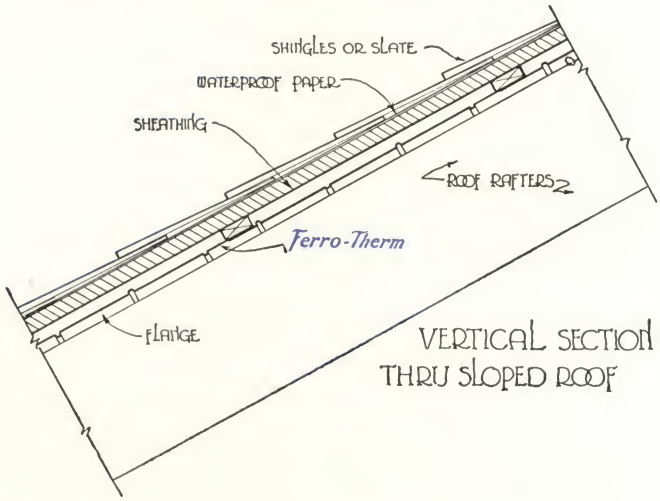
SECTION THRU SECOND FLOOR CEILING
SHOWING *Ferro-Therm* INSTALLED ON TOP OF FLOOR BEAMS



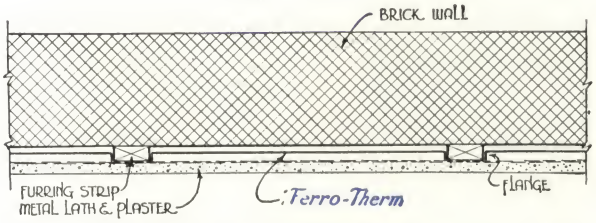
TYPICAL SECTION THRU SLOPED ROOF
SHOWING *Ferro-Therm* INSTALLED BETWEEN ROOF RAFTERS



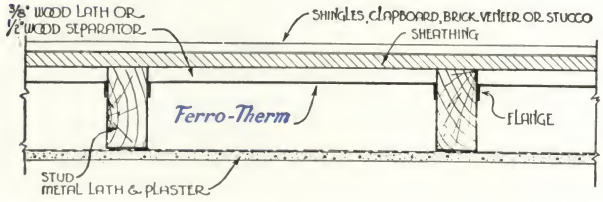
SECTION THRU SECOND FLOOR CEILING
SHOWING *Ferro-Therm* FLANGED BETWEEN BEAMS



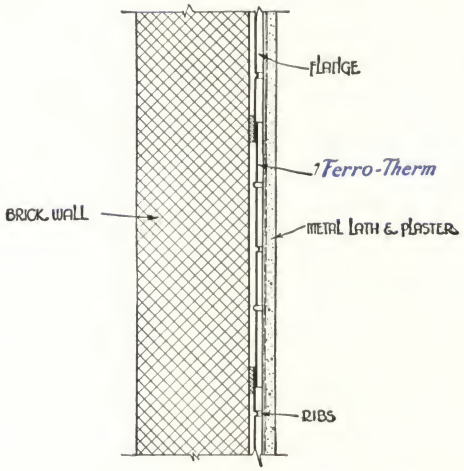
VERTICAL SECTION
THRU SLOPED ROOF



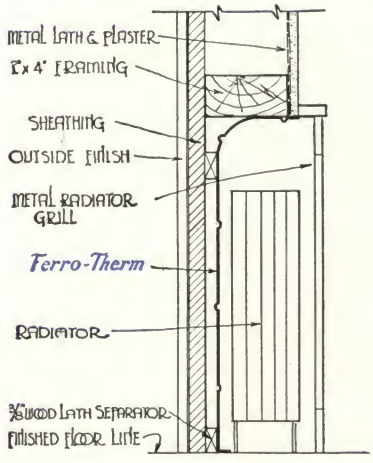
TYPICAL PLAN SECTION THRU BRICK WALL
SHOWING *Ferro-Therm* INSTALLED BETWEEN FURRING STRIPS



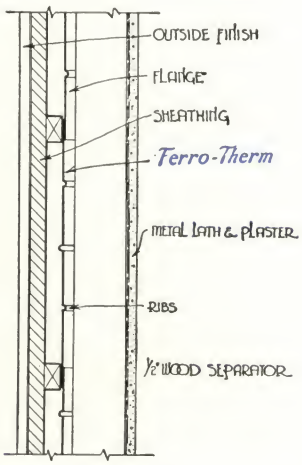
TYPICAL PLAN SECTION THRU FRAME WALL
SHOWING *Ferro-Therm* INSTALLED BETWEEN STUDS



VERTICAL SECTION THRU BRICK WALL



VERTICAL SECTION THRU
RADIATOR ENCLOSURE



VERTICAL SECTION THRU
FRAME WALL

Official Bulletin of Approved Products—Investigating Committees of Architects and Engineers

FERRO-THERM METAL HOUSE INSULATION

Manufactured by

AMERICAN FLANGE & MANUFACTURING CO., Inc., 30 Rockefeller Plaza, New York

Investigating Committees of Architects and Engineers is a national association of committees organized to investigate anything of interest to an architect or an engineer in connection with the construction or equipment of buildings. The members of the committee, whose report follows, have been selected from the offices of practicing architects and engineers of high standing in their respective professions for the express purpose of this investigation. They have served without compensation, and are competent and absolutely unbiased. The activities of the organization are financed from the profits on the sale of bulletins to manufacturers who have won approval. The addresses of the members of this committee will be furnished any architect or engineer upon application to Ralph Moreton Hooker, General Secretary, Box 72 Church Street Annex, New York.

Full approval is hereby granted by the undersigned committee to "Ferro-Therm" sheet steel house insulation, manufactured by the American Flange & Manufacturing Co., when installed in accordance with the instructions of the manufacturer. Each member of this committee has seen this insulation applied on his own jobs and is thoroughly familiar with its application and behavior under service conditions.

Residence . . . Bradley Delehanty, Arch.

Ferro-Therm is a sheet steel house insulation of such molecular structure that it reflects 95% of all radiated heat which strikes it from either side. It is stapled between studs and rafters and on to floor and ceiling beams in such a way as to insure dead air spaces. These not only add insulation but, as they are kept warm and dry by the radiated heat, prevent condensation.

Ferro-Therm sheets are coated with a lead and tin alloy which prevents corrosion when protected from the weather. These sheets do not have a bright surface, as the reflection of heat, unlike light, does not depend upon a bright surface, but upon the molecular structure of the metal.

Ferro-Therm does not absorb moisture, does not settle, is not combustible, but a fire retardent, as it affords a definite fire stop. It is vermin proof, protects the frame from rot, is light in weight, is easily handled and installed. It is also a good refrigerating insulation. It is installed by carpenters.

Ferro-Therm is furnished in sheets 24 x 32 inches which cut for studs, set 12 or 16 inches on centers, without waste, and with very little waste for rafters spaced 20 inches. Sheets are stapled between studs or rafters through a half-inch flange. The sheets are crimped every four inches for stiffness. A knife cutter and a brake for turning the flange are furnished for use on the job, also magazine staplers which work with great rapidity.

Where sheets join, a wood lath or one-half inch furring strip is cut in between studs or rafters, and the sheets stapled to it with a half-inch lap.

The committee considers Ferro-Therm a superior house insulation because of the dead air spaces resulting from the method of its installation. The air in these spaces provides a definite insulation as it is dead, not in motion. Spaces of such size or shape as to permit the movement of air currents do not give effective insulation.

Ferro-Therm is strong enough not to tear and damage in handling and installation, and while not absolutely non-corrosive (the price of such a material being prohibitive for the purpose) it is the belief of this committee that the protective coating on the Ferro-Therm sheets, protected as they are within the wall, will be effective during the life of the wall.

The high radiant heat reflectivity of the Ferro-Therm sheets, combined with the non-conductivity of the dead air spaces, should make an efficient and permanent insulation for the walls of frame buildings, and the roofs of all buildings. It can also be effectively applied between furring on masonry walls.

Caution:—It is important that Ferro-Therm should be protected from the weather until used, and that it shall not be painted.

Following this report the manufacturer presents catalogue matter which this committee considers properly describes and illustrates Ferro-Therm metal house insulation.

Committee of New York Architects and Engineers
NORMAN H. BEHRENS of Sloan & Robertson, Architects.
GARRETT J. COUCHOIS, Architect.
BRADLEY DELEHANTY, Architect.
HARRISON GILL, Architect.
E. U. MARKUSH, Consulting Engineer.

December 30, 1937

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RATINGS OF EFFICIENCY OF *Ferro-Therm* FROM TESTS CONDUCTED BY RECOGNIZED AUTHORITIES

A. S. OF REFRIGERATION ENGINEERS HANDBOOK

K Value is taken from tables on page 232 and 234, 1936 Edition of this book.

K = 0.217 B.t.u.'s per sq. ft. per hr. per °F. temp. diff.

ARMOUR INSTITUTE OF TECHNOLOGY

Statement by Prof. J. C. Peebles, M.E., Armour Institute of Technology, Chicago, Illinois, after making tests of Ferro-Therm Metal Insulation:

"The Thermal conductivity results obtained from the flat plate tests showed lower results than I have obtained from any other type of insulation. It is also interesting to note that in the refrigerator tests no moisture was observed on the metal insulation or in the insulation space. This is contrary to the results obtained when the usual commercial forms of insulation are used. . . ."

K = 0.226 B.t.u.'s per sq. ft. per hr. per °F. temp. diff.

For Calculations in Designing Adequate Heating and Air Conditioning Systems:

Exterior Walls — Shingle, Clapboard or Brick Veneer Construction with Sheathing — 1 sheet of Ferro-Therm installed between Studs — Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Solid Masonry Walls 1 x 2 in. Furring — 1 sheet of Ferro-Therm installed between Furring — Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Roof — Shingle Roof, Sheathing over Rafters — 1 sheet of Ferro-Therm between Rafters—Lath and Plaster.

U = 0.10 B.t.u.'s per sq. ft. per hr. per °F.

Combined Value of Pitched Roof insulating with 1 sheet of Ferro-Therm and second floor ceiling consisting of Lath and Plaster, Joists, Rough Flooring.

U = 0.05 B.t.u.'s per sq. ft. per hr. per °F.

SPECIFICATIONS FOR INSTALLING *Ferro-Therm*

Insulation for Residences

Scope. Insulation shall be installed in the following locations, (list locations, cellar, ceiling, exterior walls, walk and roof of enclosed porch, attic floor, all roofs, radiator pockets.)

Insulation Material and Protection

Insulation for the above locations shall be Ferro-Therm Metal Insulation in sheets 24 x 32 in. as manufactured by American Flange & Mfg. Co., 30 Rockefeller Plaza, New York City. Ferro-Therm shall be delivered at the job in original package and shall be protected from the weather until used.

Installation of Insulation

Ferro-Therm shall in general be cut to fit between studs or rafters turning ½ in. flange on each long side for stapling to the face of the studs. Staples shall be as supplied with the Ferro-Therm and shall be set not less than 6 in. apart.

Roof Insulation

Entire roof, including flat or sloping surfaces and sides and roofs of dormer and gables, shall be insulated with Ferro-Therm. After permanent roof finish is applied, Ferro-Therm shall be installed between the rafters, from plate to ridge, and furred off ⅜-½" from the underside of the sheathing with common wood lath or furring strips nailed to the sheathing and spaced so that ends of Ferro-Therm sheets shall lap 1". The Ferro-Therm shall be stapled through the furring strips and through the flanged edges to the rafters.

Attic Floor Installation

Ferro-Therm Metal Insulation shall be installed over the joists or beams of the entire attic after the roof is covered in. Sheets shall be installed flat with overlaps of approximately 1 in. and stapled to the joist not more than 6 in. apart. Where rough floor is to be laid, furring strips should be laid above each beam over the Ferro-Therm before applying rough floor.

Sheets shall be cut and fitted at all plates and openings to prevent infiltration of air at these locations.

Exterior Walls

Masonry—Ferro-Therm Metal Insulation shall be installed on furring strips on all masonry walls. The sheets of Ferro-Therm shall be cut and flanged to fit snugly between the furring strips. Horizontal wood lath strips shall be fastened to the top of each sheet by staples before the sheet is fitted between the furring strips. Each sheet shall then overlap the sheet below by approximately 1 inch over the lath strip and shall then be stapled to the lath strip. Sheets shall then be stapled through the flanged edges to the furring strips. All staples shall be spaced not more than 6 inches apart. All sheets shall be fitted at plates, sills and around windows and doors to prevent infiltration of air at these locations.

Frame or Veneer Walls

Ferro-Therm Metal Insulation shall be installed between the studs of all interior walls, including (enclosed porches, bay windows or other projection or recesses).

Note—Floors of overhanging bay windows, rooms above unheated porches, or over unexcavated portion, etc., should be insulated with Ferro-Therm in the same manner as the roof except that the insulation should be placed ⅜ in. from the bottom of the floor beams.

For Wood Sheathed Walls

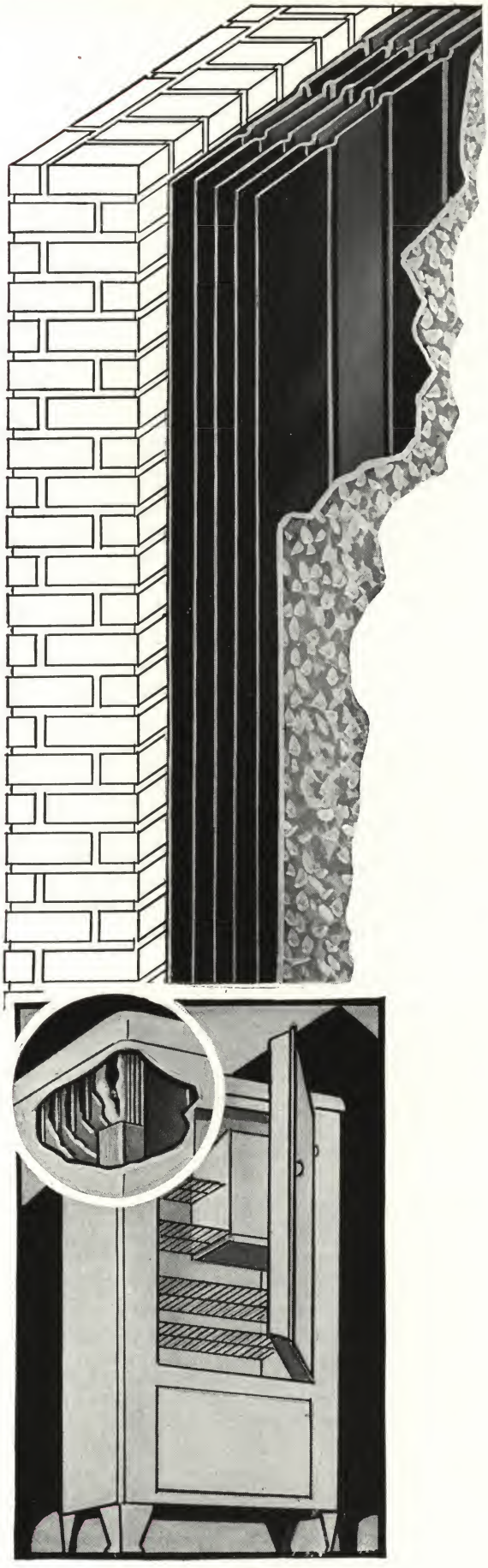
The sheets of Ferro-Therm shall be cut and flanged to fit snugly between the studs. Horizontal furring of ⅜ in. wood lath or ½ in. furring strips, shall be stapled to the inside face of wood sheathing between the studs at all horizontal joints between sheets of Ferro-Therm.

The sheets of Ferro-Therm shall be lapped 1 in. over the furring strips and stapled to them and to the studs through the flanged edges not less than 6 in. apart. All sheets shall be fitted at plates, sills, around windows, doors and other openings to prevent infiltration of air at these locations.

Radiator Pockets in Interior or Exterior Walls

All radiator pockets for enclosed or exposed radiators shall be lined with Ferro-Therm Metal Insulation on back, sides and top as directed by the architect or according to details.

Note—(Ferro-Therm must not be painted as it will lose 2/3 of its insulation and reflecting efficiency).



Ferro-Therm As Used in Cold Storage and Ice Box Construction

Ferro-Therm

For

REFRIGERATION

Requirements for a Good Refrigeration Insulation

For many years refrigeration engineers have searched for the ideal insulation material for cold storage use.

Some of the most important requirements for such a material are:

1. High insulating value.
2. Positive non-absorption of moisture.
3. Resistance to disintegration from moisture.
4. Resistance to deterioration which causes loss of efficiency in insulating value.
5. Resistance to rodents and vermin.
6. Elimination of the necessity for continually renewing insulation.
7. Non-absorbing of, or giving off of, odors or gases.
8. Low in cost.
9. Low operating cost for high efficiency.

Ferro-Therm AN IDEAL INSULATION

Ferro-Therm is an insulation which answers all of these requirements.

(1) High Insulating Efficiency

As has been previously described, the efficiency of Ferro-Therm is based on entirely different principles from those of mass insulators.

It has also previously been stated that radiant heat is responsible for from 60 to 80% of heat losses. In refrigeration it is the great proportion of radiant heat which must be prevented from entering the refrigerator from the outside in comparison with heat from conduction, which is important.

Ferro-Therm reflects 95% of the radiant heat which tries to enter the refrigerator from the outside. This high reflectivity, plus the efficiency of the dead air spaces between the sheets of Ferro-Therm, accounts for its extraordinarily low K value.

(2) Resistance to Moisture

Ferro-Therm being a metal will not absorb moisture, therefore moisture cannot collect in it.

(3) Protection from Deterioration

Ferro-Therm is protected from corrosion by a non-corrosive coating and does not disintegrate as absorbing products do.

(4) Retains Its Efficiency

Ferro-Therm retains its efficiency permanently. It does not require a bright polished surface but depends on the molecular structure of the steel for its reflective qualities which are permanent.

(5) Resistance to Rodents, Vermin, Bacteria and Micro-Organisms

It is impossible for rats and vermin to chew tunnels and make nesting places in this steel insulation. It will not support life for rodents.

(6) Not Necessary for Periodical Renewal

The destruction caused by rodents and by loss of efficiency and deterioration caused by absorption of moisture is entirely absent when Ferro-Therm is used.

(7) Non-Absorption of Odors or Gases

As Ferro-Therm is a metal it will not absorb gases or odors and therefore cannot give them off.

(8) Low in Cost

In addition to its efficiency it is very low in its cost for material and installation.

(9) Low Operating Cost

As it has extremely high efficiency in insulating value and as this value is permanent it assures a constant efficiency value after installation.

A Report of Interest to Refrigeration Engineers

The following excerpts from a report of tests made by J. C. Peebles, M.E., Armour Institute of Technology, Chicago, Ill., give some very interesting information. This is especially true with regard to the condition of absence of moisture.

"A number of refrigerator tests have been conducted with five leading makes of electric domestic refrigerators. In these tests your metal insulation was compared with the insulating material originally installed in the refrigerator by the manufacturer.

"The thermal conductivity results obtained from the flat plate tests showed lower results than I have obtained from any other type of insulation. In one case I obtained as low as 0.195 B.t.u.'s per hour, per square foot of material, per degree Fahrenheit of temperature difference between the surfaces of the material for one inch thickness.

"The results obtained from the refrigerator tests indicate that your metal insulation is superior to any other insulation now being used for refrigeration work. It is also interesting to note that in the refrigerator tests *no moisture was observed on the metal insulation or in the insulation space. This is contrary to the results obtained when the usual commercial forms of insulation are used.*"

The United States Government Specifies *Ferro-Therm*

STANDARD GOVERNMENT FORM OF CONTINUATION SCHEDULE FOR FORM 31 OR 33 (SUPPLIES)

SCHEDULE OF SUPPLIES — INSTALLED ICE BOXES FOR C.C.C. CAMPS AND SECOND CORPS AREA

Ice Box Specifications: Note: The contractor must furnish and deliver all material according to specification and all labor for proper construction and erection of the ice box and equipment in accordance with this specification and drawing No. 607-E. Copy of this drawing will be furnished bidder upon request.

Information to Be Furnished with Bid: Each bidder shall submit with his bid, a complete description of the type of material he proposes to furnish and proposed construction which will enable the contractor to guarantee a temperature to be maintained from *not more than 35 degree to 40 degree Fahrenheit,* under normal service conditions. Insulation to have an over-all thermal conductivity of .1 B.t.u. per square foot per hour per degree (Fahrenheit) temperature difference.

Construction: Insulating Material in walls, ceiling, door, and floor to be *Ferro-Therm metal insulation* consisting of four (4) parallel spaced metal sheets or material of equal *high thermal-insulating value* and *resistance to moisture.* Insulating material shall be properly installed and supported. It may fill space between walls to insure protection against infiltration of air and moisture.

Where *Ferro-Therm* is Used

Ferro-Therm is specified wherever refrigeration is used in such construction as:

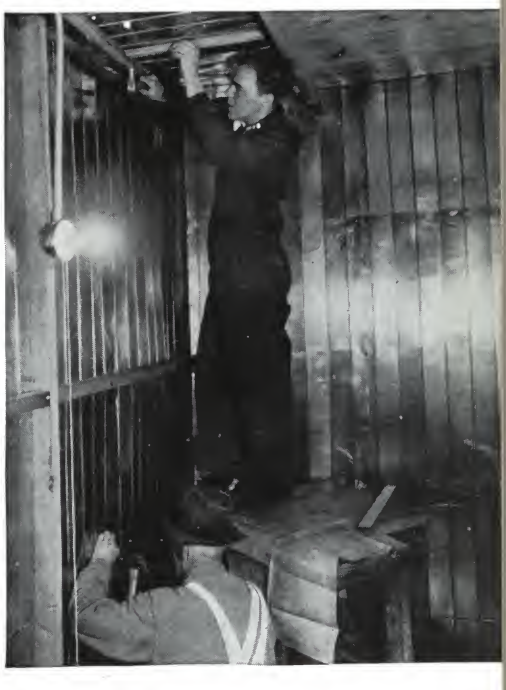
Cold Storage Rooms
Ice Boxes and Refrigerators
Hospitals
Fur Storage
Cold Storage Buildings
Breweries
Beer Cooling Rooms
Refrigerator Trucks
Refrigerated R.R. Cars and Containers
Dairies
Ice Cream Plants
Refrigerator Ships

Services

The services of a fully equipped laboratory and a trained engineering staff are free to prospective users for the purpose of designing the most efficient combination of Ferro-Therm metal insulation for specific purposes.

Write to the American Flange and Mfg. Co. for complete engineering data and estimates on refrigerator constructions insulated with Ferro-Therm.

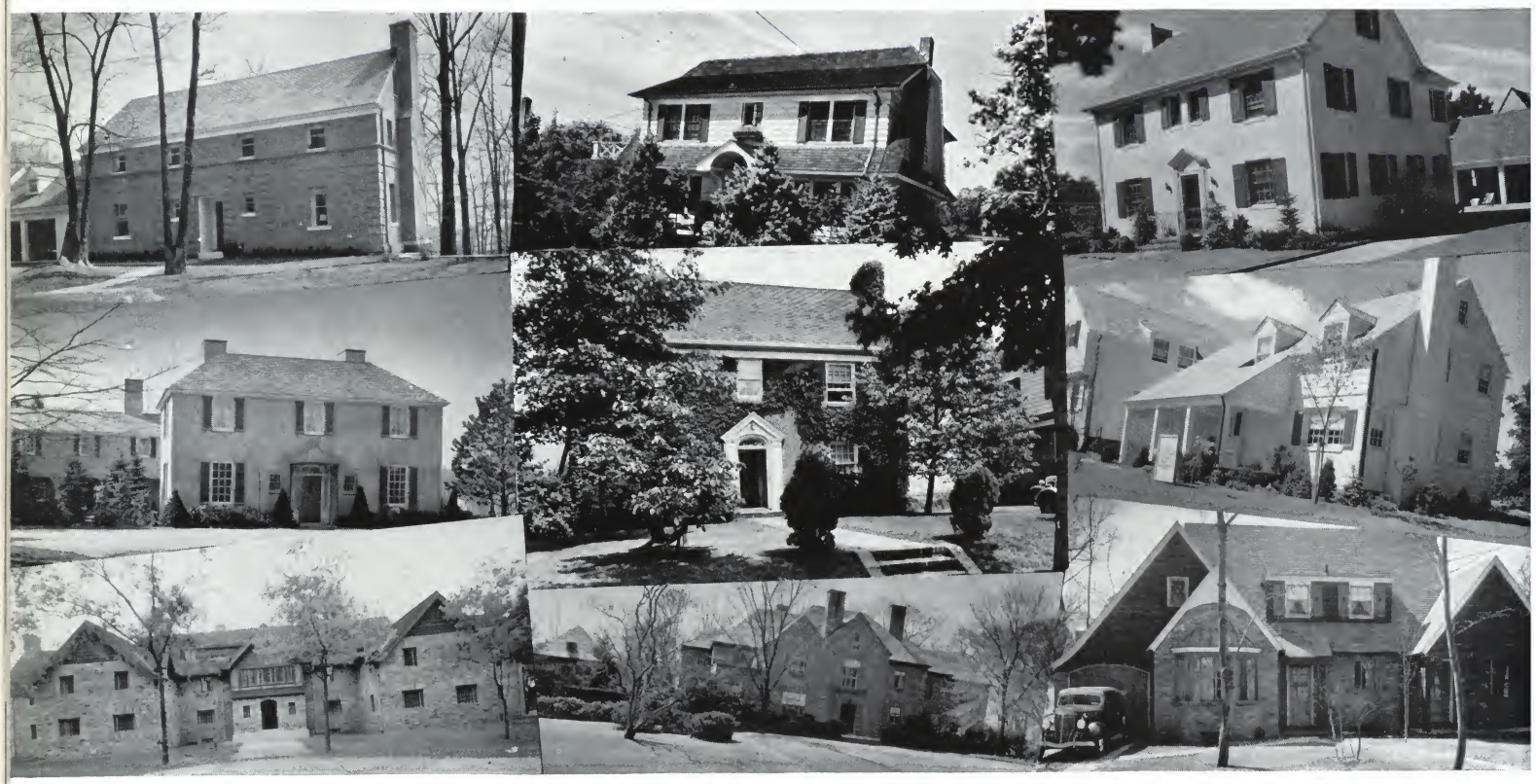
New York Address: 30 Rockefeller Plaza, New York City



Buildings and Cold Storage Rooms Insulated with *Ferro-Therm*

The Colonial Village at Clairton, Pa., pictured above, consisting of 600 houses, is completely insulated with Ferro-Therm Metal Insulation. Gilbert Varker, Inc., Engineers responsible for the use of particular materials in this mammoth project delved deeply into the merits of all types of insulation. Ferro-Therm Metal Insulation fulfilled all of the requirements for perfect comfort and economy.

A FEW REPRESENTATIVE RESIDENCES INSULATED WITH FERRO-THERM



SOME ARCHITECTS WHO SPECIFY FERRO-THERM

Randolph H. Almiroty
Beers and Farley
Reuben H. Bowden
Geo. P. Butler, Jr.
Edward B. Caldwell
Henry T. Child
G. J. Couchois
Matthew W. Del Gaudio
Dodge and Morrison
H. I. Feldman
Harrison Gill
Henry C. Hahn
Phillip Ives
Kimball and Husted
Knappe and Morris
Frank J. Foster
Morris and O'Connor
O'Hara and Edson
Douglass Orr
Russell and Clinton
Wm. Edgar Shepherd
Walter John Skinner
Sloan and Robertson
Dwight Smith
F. G. C. Smith
W. Stewart Thompson

OTHER USERS OF FERRO-THERM

Gillies, Campbell, Builders
New York World's Fair, 1939, Inc.
Skinner, Cook & Babcock, Inc., Builders
Kuhn, Smith & Harris, Inc., Builders
O'Brien & Kinkel, Builders
Restland Management Corp.
The Barrett Co.
The DuPont Co., Belle, W. Va.
The General Electric Co.
The United States Army
Johnston Livington Co., Inc., Builders
Ridgefield Lakes, Inc., Builders
John R. Thompson Co., Restaurant
The Westinghouse Co.
Kraushaar Bros., Architects & Builders

SECTION 10

CONTINUED ⟶

REYNOLDS METALS COMPANY, INCORPORATED

Federal Reserve Bank Building

RICHMOND, VIRGINIA

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

THE INSULATION THAT WENT TO THE SOUTH POLE

DESCRIPTION — REYNOLDS METAL TYPE B INSULATION

Reynolds INSULATION consists of bright sheet aluminum cemented to both sides of a tough kraft paper, furnished in rolls.

SHIPPING DATA REYNOLDS TYPE B INSULATION

Asphalt mounted	Sq. ft.	Lbs.
25-in. width 120 ft. long	250	14
33-in. width 90 ft. 4 in. long	250	14
36-in. width 83 ft. 4 in. long	250	14

Specify 36-in. glue mounted for higher temperatures.

CHARACTERISTICS

Reynolds Metal INSULATION is waterproof, windproof, verminproof, and non-absorptive. It is light in weight and flexible, yet stiff enough to conform to angle and curves when not under tension or suspended. Its heat-storage capacity is negligible, owing to its light weight and limited mass. The aluminum used retains its reflectivity under all normal conditions, as the surface is protected by a transparent oxide which forms immediately on exposure. Tests conducted by Prof. Gordon B. Wilkes on Reynolds Metal INSULATION exposed to laboratory fumes, moisture, dust and saltwater atmosphere show that visual brightness is not essential to good performance. Aged and soiled material maintained reflectivities from 87.5% to 94.5%.

Reynolds Metal INSULATION will not absorb moisture; therefore its insulating value is not affected by water or water vapor. An absorbent material loses its insulating value as its moisture content increases.

INSULATING VALUES

Conductance and Resistance Values		Conductance	Resistance
Air space over ¾" faced both sides with ordinary materials		1.10	.91
Air space over ¾" faced one side with insulation		.46	2.17
Air space over ¾" faced both sides with insulation		.41	2.44
Air space divided by single curtain of insulation (both sides bright) forming two air spaces, each over ¾"		.23	4.35
Air space divided by multiple curtains of insulation, each air space over ¾"	2 curtains forming 3 air spaces	.15	6.78
	3 curtains forming 4 air spaces	.11	9.22
	4 curtains forming 5 air spaces	.09	11.66
Exposed surface, ordinary building materials, in still air		1.65	.61
Exposed surface faced with insulation, in still air		1.18	.85

AS A VAPOR BARRIER

Table below gives values for the rate of moisture transmission through the more common building materials encountered. The values given are expressed in terms of Btu/Hr. 100 Sq. Ft./Gr. per lb. difference.

MOISTURE TRANSMISSION VALUES

	Latent Heat Btu/Hr/100 Sq. Ft./Gr/Lb. Difference
Double aluminum foil on paper	0.1
50-lb. asphalt impregnated and surface coated sheathing paper	0.45
Coated surface aluminum foil (single)	1.0
2 coats asphalt paint	1.1
2 coats aluminum paint	1.2
Duplex building papers	1.3
Galvanized iron sheets—average wall or roof construction	1.3
Wood per inch thickness	4.0
Face brick—per inch thickness	4.5
Concrete—per inch thickness	5.5
Common brick—per inch thickness	6.0
Cinder concrete—per inch thickness	9.0
Cement blocks—per inch thickness	9.0
Plaster—(⅜")	23.0
Fiber Board (½")	38.0
Rock wool—per inch thickness	40.0
Expanded mica (Vermicallite)—per inch thickness	45.0

Table prepared by Carrier Corporation, Syracuse, N. Y.

USES

Reynolds Metal INSULATION can be used for insulating the walls and roofs of all types of buildings.

Millions of feet are in homes, apartments, hotels, office buildings, factories, garages, farm buildings, Government projects, theatres, etc.

Reynolds Metal Insulation can be bought through leading Lumber and Supply Dealers

REYNOLDS METAL INSULATION SPECIFICATION AND APPLICATION INSTRUCTIONS

ATTIC INSTALLATION ON UNDER SIDE OF RAFTERS

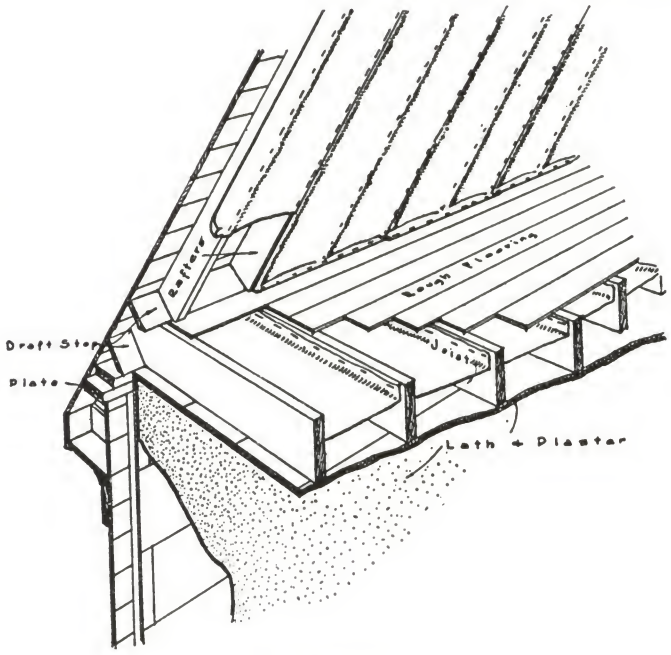


Diagram No. 1

According to the spacing of the rafters, use Reynolds Metal INSULATION 25 or 33 or 36 in. Type B parallel to the rafters.

Cut sheets to the desired length to run entire length of rafters on one side of the roof, with enough extra length to lap at the ridge pole and to close the air space at the eaves.

Center the sheet on the middle rafter, and staple or nail to the rafter. Staple or nail the outside edges.

If insulation is to be applied to ceiling, proceed as outlined in Diagram No. 2.

STORY AND A HALF BUILDING—RAFTER AND STUD INSTALLATION

For Walls

Use 36-in. Reynolds Metal INSULATION Type B for sidewalls 16 in. on centers parallel to studs.

Cut sheets to desired length to run full length of wall, with enough extra length to close the air space at both top and bottom.

For Ceiling Joists

According to the centering of floor joists, use Reynolds Metal INSULATION 25 or 33 or 36 in. Type B parallel to the joists.

Cut sheets to desired length to run full width of attic, with enough extra length to make tight joint under the eaves.

Center the sheet on the middle joist so that edges will form tight lap where the next sheet is applied. Staple or nail on the center joist first, and then staple the outside edges.

Crease the insulation with fingers over the edges of the joists to form a ¾-in. indentation.

For Rafters

According to the spacing of the rafters, use Reynolds Metal INSULATION 25 or 33 or 36 in. Type B parallel to the rafters.

Cut sheets to the desired length to run entire length of rafters on one side of the roof, with enough extra length to lap at the ridge pole and to close the air space at the eaves.

Center the sheet on the middle rafter and staple or nail to the rafter. Staple or nail the outside edges.

Care should be taken to end the air spaces where the sidewall meets the roof on the sill plate or at a joint that allows lapping at ends of sheet, so that all air spaces are kept as tight as possible.

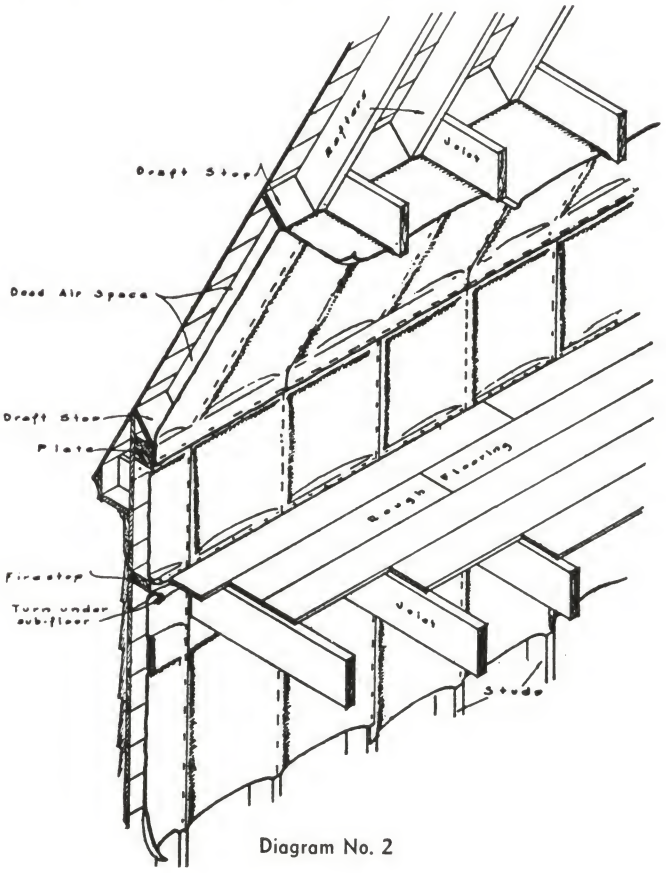


Diagram No. 2

Reynolds Metal Insulation can be bought through leading Lumber and Supply Dealers

SILVERCOTE

BRAND OF

REFLECTIVE INSULATION

TUFCOTE

REINFORCED

WATERPROOF

BUILDING PAPER

SPECIALTY CONVERTERS, INC.

GENERAL OFFICES **EAST BRAINTREE, MASS.**

MILLS: EAST BRAINTREE, MASS. · CLEVELAND, OHIO

SOUTH WINDHAM, MAINE

SILVERCOTE *Reflective* INSULATION

PRINCIPLE OF *REFLECTIVE* INSULATION

LAWS OF HEAT TRAVEL—The following statements may be made as facts, susceptible of proof, accepted as established laws of heat travel.

LAW No. 1—*HEAT TRAVELS IN THREE WAYS*—
1. By Conduction—The passage of heat through solid materials molecule to molecule, by contact. The denser the material the faster the heat travel. Hence heat travels more readily through metals than wood and more readily through wood than fibrous material or cloth. (Illustrations—the passage of heat to the handle of a poker, one end of which is in fire. The melting of snow on a cement walk where a heated portion of an adjoining building is under the walk, when the outside temperature is below freezing.)

2. By Convection—The conducting of heat through atmosphere by air currents. (Illustration—The rising of heated air from a radiator or heater, its passage to the top of a room or enclosure, its passage downward on cooler sides of such room or enclosure, particularly in front of windows in cold weather.) Heat travels by convection in all air spaces but the smaller and more confined the air space, the less convection occurs.

3. By Radiation — The direct passage of heat energy through space (atmospheric or vacuum), from object to object, without molecular contact (conduction) or atmospheric movement (convection). (Illustrations — The sun's heat rays (infra red rays) passing through space for 90 million miles and becoming heat upon contact with atmosphere and earthly objects. The passage of heat from the filament of an electric light bulb across the vacuum in the bulb, becoming heat upon contact with the glass enclosure.)

LAW No. 2—Through a vacuum heat is transferred 100% by radiation and through such air spaces as usually occur in building construction, the heat transfer by radiation is estimated at 50% or more. Silvercote products deal essentially with radiant heat.

LAW No. 3—A brilliant, polished surface reflects heat rays in exactly the same manner as it reflects light rays. Heat rays (infra red rays), however, unlike light rays, penetrate optical darkness and are reflected with equal effect in sealed dark spaces not visible to the eye. Such surfaces reflect, rebound, or turn back a large percentage of the radiant heat that strikes them, according to the brilliancy and homogeneity of the surface, entirely preventing such percentage of heat from entering the material in the slightest degree.

LAW No. 4—EMISSIVITY—A highly polished, reflecting surface emits or throws off heat much more slowly than a dull, dark surface. All colors, tones, and hues have rated values in the emission of heat. Dead black, which absorbs and emits more heat than any other shade, is taken as a standard and rated 100%. Under this classification, a brilliant pure silver surface is rated at 9%, and polished silver-like surfaces are rated near this percentage. Hence the small percentage of heat that is admitted to a material having a polished silver surface is discharged very slowly from the opposite side when that side is also surfaced with a like silver surface. (Illustrations—A black kettle discharges vastly more heat than one surfaced outside with a burnished surface of silver or copper. Radiators and all heating units, are in their most effective color for the discharge of heat when black.)

LAW No. 5—Prior to the full development of the reflective principle, all commercial thermal insulation was based upon the slow conduction of heat, the principle being to build a structure, filled with minute air cells, too small for convection, that would interfere with the transfer of heat from molecule to molecule and thus slow up its passage from one side of the material to the other.

The principle of reflective insulation is to reflect or rebound heat at the surface of the material and permit as little as possible to enter.

For the above reason, the thickness of a reflective material does not matter (as is the case with other types of insulation), so long as it possesses sufficient strength to be practical in the usual forms of construction.

SILVERCOTE SURFACES

The surfaces of all Silvercote products are of oxide composition polished into a brilliant silver sheen which reflects radiant heat to a marked degree, as will be observed by the insulating values recited hereafter in these specifications and drawings. Essential properties follow:

1. The surfaces are of an oxide composition and are consequently free from oxidation to which many industrial metal surfaces are subject.
2. The surfaces are waterproof and washable.
2. The surfaces are highly moisture resistant.
4. The surfaces are not affected by acids or gases encountered in the customary uses of thermal insulation, whether in building construction, refrigeration, or the cold storage fields.
5. The surfaces are entirely homogeneous and impervious to air infiltration.

Silvercote Insulation Fabric

DESCRIPTION—Silvercote Insulation Fabric is manufactured from two external sheets coated with an oxide composition and polished to a highly reflective surface possessing the essential characteristics heretofore described for all Silvercote surfaces. The sheets are laminated with specially prepared asphaltum and reinforced with an interlining of fabric, imbedded in the lamination, consisting of a half-inch mesh of strong jute cords. Two silver like surfaces are exposed. The material thus fabricated is strong and flexible and applicable to all forms of construction. It can be creased, folded, and tucked into the most inaccessible places without injury. It requires no specialist for its installation but can be successfully handled by the most inexperienced. Silvercote Insulation Fabric weighs approximately 75 lbs. per thousand square feet.

SIZES — Silvercote Insulation Fabric is made in convenient widths and lengths. It is bundled in rolls of 250 and 500 square feet in the following widths:

36 in. for spanning two framing spaces (three framing members, studs, joists, or rafters set 16 in. on centers where sheathing, flooring, or interior finish is attached to the members at the same points of contact). The 4 in. slack in the material permits it to be bowed in toward the center of the wall creating an air space on each side.

32 in. for spanning taut two framing spaces (three framing members, studs, joists, rafters, or furring set 16 in. on centers).

26 in. for spanning one framing space (two framing members—studs, joists, or rafters, set 24 in. on centers) in the same manner as described for 36 in. material.

18 in. for installation between studs, joists, or rafters set 16 in. on centers, where successive layers through wall sections are required.

THERMAL VALUE — Silvercote Insulation Fabric has been tested by a number of University and Industrial Laboratories with approximately the same results. For the purposes of these specifications, however, the tests run by Dr. J. C. Peebles of Armour Institute of Technology will be used as a basis for figuring the wall values of the various sections illustrated by the drawings contained herein. Tests of Silvercote Fabric dividing an air space conducted by the Armour Institute of Technology give it a rating of .33 B.t.u.'s per hour, per square foot, per degree of temperature F. per commercial thickness of 1/32 of an inch. The tests were run at a mean temperature at 70° F. The above values are accepted and published by American Society of Heating and Ventilating Engineers "Guide" and the "Refrigerating Data Book" issued by American Society of Refrigerating Engineers.

New home receiving an over coat of Silvercote

APPLICATION TO FRAMING—Silvercote Insulation Fabric, 36 in. Material, is designed to bridge two framing spaces (three framing members, studs, joists, or rafters set 16 in. on centers, where sheathing, flooring, or interior finish is attached to the members at the same point of contact) Application is as follows:

Nail the two outside edges, press material in, and nail through center to the intermediate framing member; then press in between members and crease at edge of each member with thumb and finger to create as uniform an air space between the material and the overlying finish as possible. Use large head tacks or staples for application.

In installing Silvercote Fabric, one important consideration should at all times be borne in mind. The reflective principle does not depend upon the solidity of a wall section but rather upon alternating air spaces with layers of material. The depth of these spaces is not particularly important. However, where possible, it is recommended that air spaces between the layers of material and

Clubhouse in the process of being completely insulated with Silvercote

Air conditioned residence at St. Louis, using two layers of Silvercote on side walls and roof sections

between the material and adjoining structural members be held to not less than ⅜ in.

Silvercote Insulation Fabric, 32 in. Material, is designed to stretch taut across two framing spaces (three framing members, studs, joists, rafters, or furring set 16 in. on centers). In this application, use large head tacks or staples. In cases of shallow furring, a shorter nail may be used, especially where the nailing line is to be covered with another succeeding furring strip for additional layers.

Silvercote Isulation Fabric, 18 in. Material, is designed for application between framing set 16 in. on centers. As this material is put in place with ½x1 in. cleats, any nail suitable for fastening the cleats is acceptable.

The method of installation as illustrated in drawings on page 7 is prescribed to create uniform air spacing between the sheathing or exterior finish and the first layer of Fabric and between the successive layers of Fabric.

Care should be exercised, in nailing with cleats, to drive the cleats tight against adjoining framing so that no air infiltration will occur at this point.

Silvercote Fabric is tough and flexible and adaptable to all sorts of conditions. Every installation should be carefully watched to see that the Fabric is folded and tucked into all odd angles and corners, around all window and door frames, piping, etc., making a complete seal against air infiltration.

Silvercote application to second floor ceiling joists

Air Conditioning and the Moisture Question

Silvercote Insulation Fabric is especially designed to resist the passage of water vapor in building structures and cold storage units, and the penetration of moisture laden air through wind pressure.

The question of moisture penetration into the framing of all structures has become more and more acute with the advent of modern heating and air conditioning. Formerly, where dry heat was produced on the interior of buildings during the winter season such moisture as passed into the uninsulated walls, readily went through the structure and was ventilated to the outside. With modern heating where relative humidities are increased from as low as 5% to as high as 50%, the moisture vapor introduced into the interior of buildings exerts a high pressure upon the inside of the exterior walls. It passes readily through plaster and other structural materials until it reaches the dew point temperature and then deposits in droplets, when this temperature is reached, upon whatever material is present in the wall. This may be the exterior sheathing or where unprotected conductive forms of insulations are used the dew point may be within the insulations themselves, and water will often collect to the point of complete drenching. In severe weather this deposit of water freezes and forms a column of ice, increasing the density of the insulation material and reducing the insulation value many times. With the advent of warmer weather the ice melts. If the insulation is in the roof section, water penetrates the plaster and produces the effects of roof leaks. If in side walls it settles to the bottom of the section drenching the entire framework. Such conditions cause framing to warp and twist, distort interior woodwork and blister paint and other interior finish from the surface of the walls.

Illustration of Silvercote application to attic rafters

Conditions such as are above described are becoming more and more prevalent throughout the country as indoor humidities are increased, and are receiving the attention and study of such institutions as The American Society of Heating and Ventilating Engineers, the American Society of Refrigerating Engineers, the U. S. Bureau of Standards, the Forest Products Laboratory, U. S. Department of Agriculture, the University of Minnesota, Syracuse University, Agriculture Experimental Station State of Ohio, and many other commercial and industrial laboratories.

The questions to be decided are—What insulation value has commercial conductive forms WHEN WET instead of WHEN OVEN DRY as all forms have been when previously tested? What deteriorating effect does wet insulation and framing have upon the building structure? What can be done to prevent moisture from penetrating to the interior sections of building structures?

The above photograph illustrates proper application in air conditioned homes when two layers of Silvercote are specified. If only one layer is specified, it should be applied on inside stud faces and bowed to form a one inch air space between insulation and plaster

Silvercote Insulation Fabric, when applied in accordance with our specifications, to the interior of a structure seals the walls against the penetration of moisture vapor created by modern heating and air conditioning and holds it suspended in the interior air. When applied on the outside it prevents the infiltration of moisture laden air through wind pressure to the interior sections of building structures.

During the winter heating season, with a high moisture pressure constantly exerted against the inside of the exterior walls, Silvercote Fabric, because it is highly moisture resistant, holds back the penetration of sufficient moisture so that, under ordinary winter conditions, a condensation point is not reached within the interior sections of wall structures, as the moisture held back renders the air within those sections sufficiently free from moisture content to make it capable of carrying its own moisture in suspension and the section, therefore, remains dry.

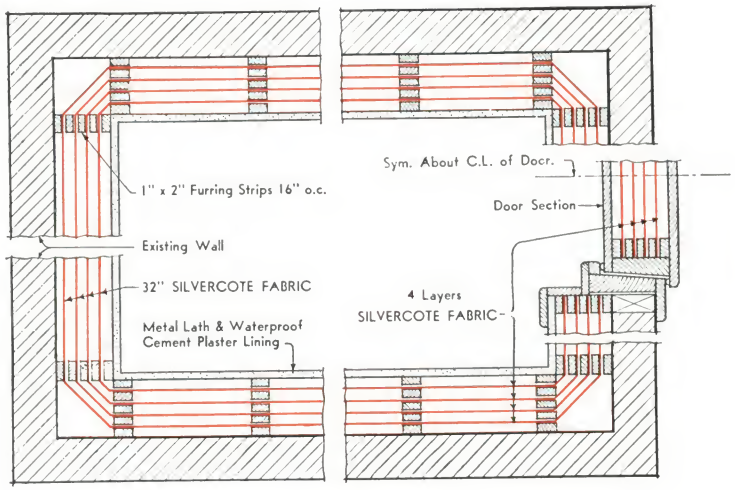
When Silvercote Fabric is applied to a standard wall in accordance with our curtain or "bow-in" method, THREE confined air spaces, each with an insulation value determined by the best laboratories in the country, and FOUR reflective surfaces implanted upon moisture resisting units 1/32 in. thick, are created within the structure. The wall section then becomes a non-absorbent, non-cellular, section consisting of air spaces and moisture resisting curtains with high thermal value, as evidenced by tests recorded in the American Society of Heating and Ventilating Engineers' Guide and the Refrigerating Data Book and transferred to the ratings given various wall sections in these specifications and drawings.

The section maintains a constant unvarying thermal value and remains in a dry condition.

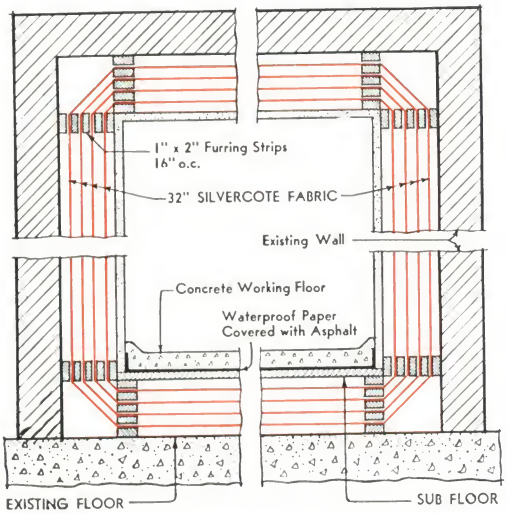
REFRIGERATION COLD STORAGE & COOLING ROOMS

Conversion of Existing Rooms into Cold Storage Compartments
and Erection of New Walk-in Coolers

FOUR LAYERS OF SILVERCOTE FABRIC APPLIED TO WALLS, CEILING AND FLOOR OF EXISTING ROOM TO MAINTAIN INSIDE TEMPERATURE OF 30 TO 40 ;
FOR TEMPERATURES BETWEEN 20 & 30 USE 5 LAYERS; 10 & 20 —6 LAYERS; 0 & 10 —7 LAYERS; —15 & 0 —8 LAYERS.



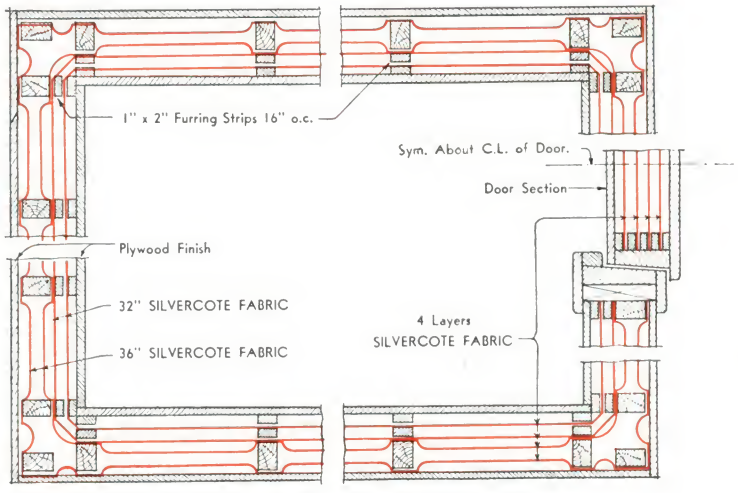
PLAN SECTION OF SILVERCOTE INSULATED STORAGE ROOM



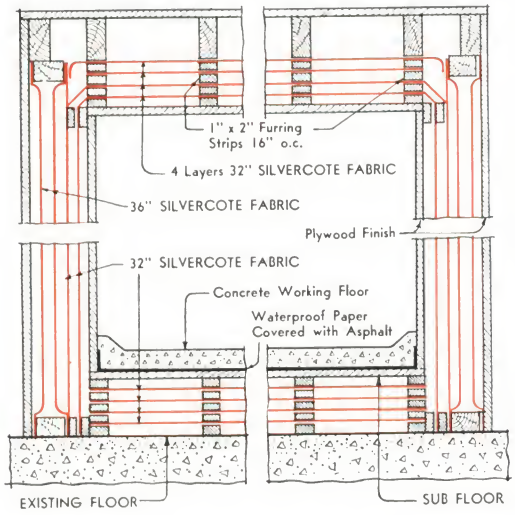
CROSS SECTION OF SILVERCOTE INSULATED STORAGE ROOM

NOTE:-
Seal Joints of Outer Layer of Fabric with Asphalt

WALK-IN COOLER INSULATED WITH 4 LAYERS OF SILVERCOTE FABRIC TO MAINTAIN INSIDE TEMPERATURE OF 30 TO 40



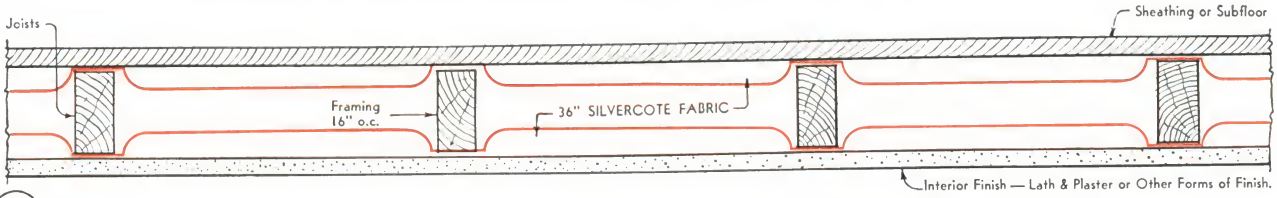
PLAN SECTION OF SILVERCOTE INSULATED WALK-IN COOLER



CROSS SECTION OF SILVERCOTE INSULATED WALK-IN COOLER

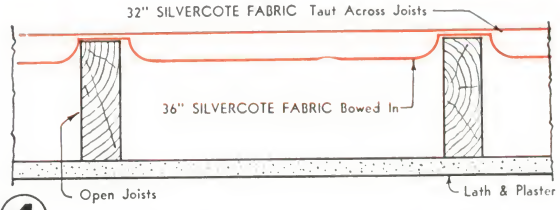
APPLICATION DETAILS FOR COMMON TYPES OF BUILDING CONSTRUCTION

Curtain Method of applying two layers of Silvercote between wood framing and over masonry walls. If only one layer is to be used it should be applied to the inside face of framing members. As shown in photograph on Page 5, the insulation should be carried over top and bottom plates.



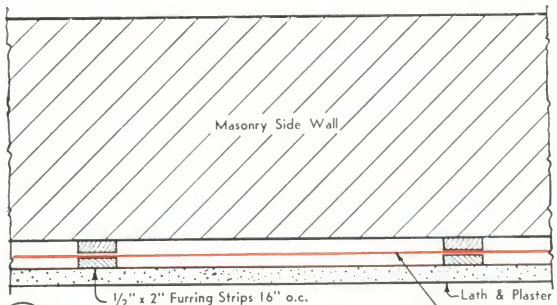
1

36" SILVERCOTE FABRIC APPLIED TO WOOD FRAMING STUDS JOISTS AND RAFTERS
Nail Outside Edges First Then Nail Thru Center Press Fabric in & Crease with Thumb & Finger at Edges of Studs
No Building Paper Required.

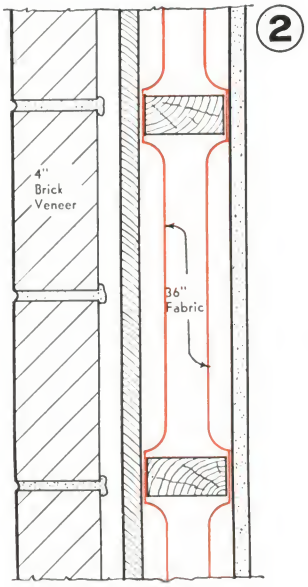


4

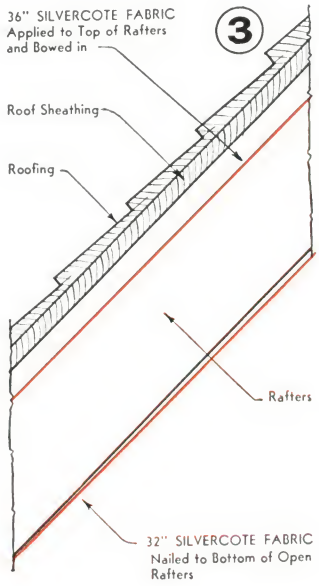
ECONOMICAL ATTIC INSULATION
If Sub-Floor Is Used Apply as in Detail No. 1.



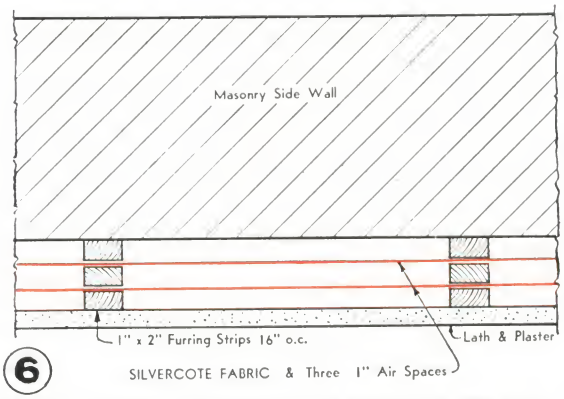
5



BRICK VENEER WALL



PITCHED ROOF



6

INSULATING THE INSIDE OF MASONRY WALLS
32" SILVERCOTE FABRIC 1–2 or 3 Layers as Required

		B.T.U. Un-In.	B.T.U. Ins.	% Stopped
Wall 1 Figured As Standard Frame Wall With Wood Sheathings Wood Siding Outside	A. One Layer Fabric Metal Lath and Plaster	.26	.16	38%
	B. Two Layers Fabric Metal Lath and Plaster	.26	.12	54%
Wall 2	A. 1 Layer Fab.	.22	.15	32%
	B. 2 Layers Fab.	.22	.11	50%
Roof 3	A. 1 Layer Fab.	.56	.20	64%
	B. 2 Layers Fab.	.56	.14	75%
Floor 4	A. 1 Layer Fab.	.69	.22	68%
	B. 2 Layers Fab.	.69	.15	78%
Wall 5		.32	.16	50%
Wall 6		.32	.12	62%

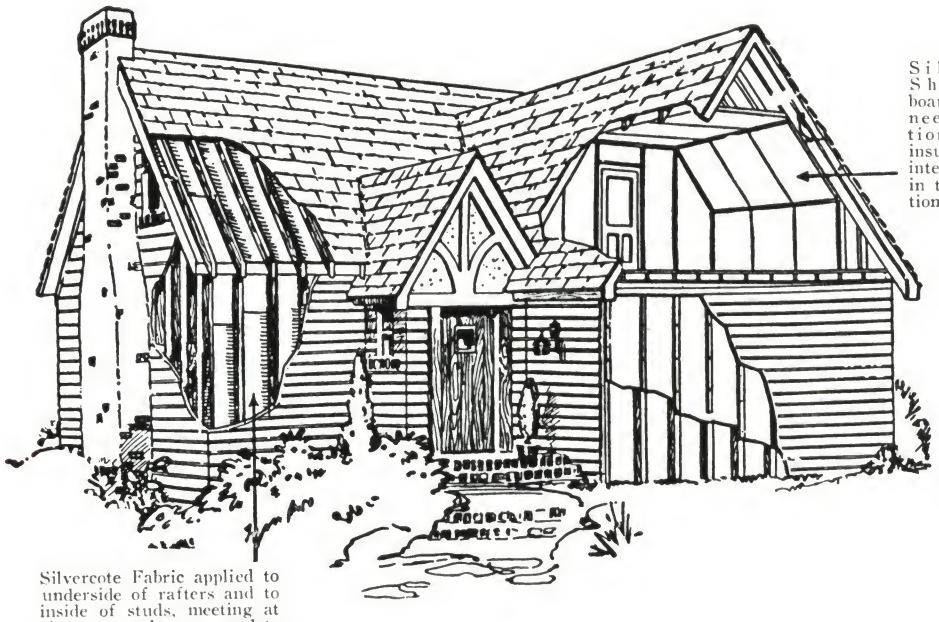
Silvercote Insulation Board

DESCRIPTION—Silvercote Insulation Board is manufactured in a manner similar to wood fibre wallboard, to which is applied a top liner coated with pigment and polished to a highly reflective surface. This surface possesses the essential characteristics heretofore described for all Silvercote surfaces. The reverse side has a manila liner, dead level, beater sized and tacky, a perfect surface for painting. The finished board is 3/16 in. thick and weighs approximately 560 lbs. per thousand square feet.

SIZES—Silvercote Insulation Board is made 3/16 in. short of 4 ft. wide, to allow for a slight space between boards at the point of nailing. It is cut 6, 7, 8, 8½, 9, 10, and 12 feet long.

THERMAL VALUE—Tests run by Dr. J. C. Peebles, Armour Institute of Technology, give Silvercote Insulation Board a thermal value of .49 B.t.u.'s per hour, per square foot, per degree of temperature F., per commercial thickness of 3/16 of an inch. The tests were run at a mean temperature of 70° F.

AS INTERIOR FINISH—Silvercote Insulation Board is especially designed as an interior finish for use over old walls of plaster or other materials, or for direct application to framing. It finds a particular use in the making of backgrounds for window displays, exhibits, and other temporary structures when decorative effects are sought. The fact that it is a two sided board, one side silver surfaced, waterproof and washable, the other especially prepared for painting, adds greatly to its usefulness. Wherever installed it provides decoration and insulation in one installation.



Silvercote Sheathing board provides needed additional rooms, insulation and interior finish in this application.

Silvercote Fabric applied to underside of rafters and to inside of studs, meeting at plate to make a complete moisture seal.

Living room in nearly completed residence. Silvercote will provide full insulating value and moisture protection

Silvercote's waterproofed surfaces protect this residence against rain during construction

APPLIED TO FRAMING—For permanent installation to framing as interior finish, Silvercote Insulation Board is applied in the following manner:

The 4 ft. board spans three framing spaces (four framing members set 16 in. on centers). If it is desirable to throw the room enclosure into uniform panel spacing, insert additional studs or furring to receive the edges of the board for nailing. Fit and cut the boards to the required spacing and prepare for nailing, then cover the faces of the intermediate studs or framing members with Hedsel Cement or Emulsified Asphalt Adhesive. Put the boards in place, pressing them firmly against the adhesive covered framing, and hold in place with shoring or bracing until adhesive is set. Then nail at the outside edges and across top and bottom with 1 in. nails with ¼ in. heads spaced 3 in. apart. Cover joints with wood or metal batten moldings as taste or specifications require. This leaves the panel surfaces free from nails.

METAL JOINT MOLDINGS — Where metal joint moldings are used, the following procedure is observed. Firmly nail metal joint moldings to the center of studs or other framing faces on two adjoining sides of the panel to be set. Then cover the faces of intermediate studs or framing with Hedsel Cement or Emulsified Asphalt Adhesive. Place joint moldings over the two remaining sides of panel, and slide the panel into the joint moldings already set in place. Press firmly against intermediate studs covered with adhesive and hold in place with shoring or bracing until adhesive is set. Then firmly nail the exposed flanges of the two remaining joint moldings not previously fastened. Continue this procedure to the setting of the final panel where the process will be interrupted by the fact that both side moldings will be securely fastened in place. In this case omit the setting of the top or bottom molding and cover intermediate framing with adhesive including the top and bottom framing. Slide the top and bottom moldings on to the panel and spring the board into the slots of the moldings already fastened. The unnailed moldings will then be firmly held in place by adhesive.

Note: The company can furnish wood filled metal moldings for base, wainscot and cap, for additional trim, if desired. These moldings are usually fastened with screws of the same metal finish as the moldings.

WITH METAL LATH AND PLASTER — Where Silvercote Insulation Board is used for insulation only and is to be covered with metal lath and plaster, as in some cold storage work, turn the silver like surface toward the inside of the wall and nail firmly at all framing bearings. Then coat the room side (back side of board) with Emulsified Asphalt and apply metal lath and plaster over this surface in the usual manner without furring, pressing the plaster through the meshes of the lath firmly against the asphalt-covered board.

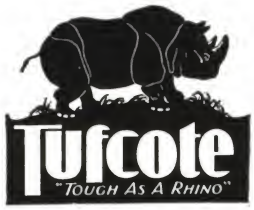
Note: This method of installation may be used in any case where Silvercote Insulation Board is shown on drawings as an interior finish, if a plaster interior is desired.

Tufcote REINFORCED WATERPROOF PAPERS

DESCRIPTION — Tufcote Reinforced Waterproof paper is made in two grades — Standard Tufcote and Special Treated Tufcote.

Standard Tufcote Reinforced Waterproof Paper is made from two sheets of heavy kraft paper combined with a generous quantity of odorless asphalt and having imbedded in the asphalt a strong, double reinforcement of jute webbing.

Special Treated Tufcote is similar to Standard Tufcote with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before duplexing to furnish, in the final product, an 8-ply building paper containing five films of asphalt, each film highly resistant to moisture, dry rot and fungus.



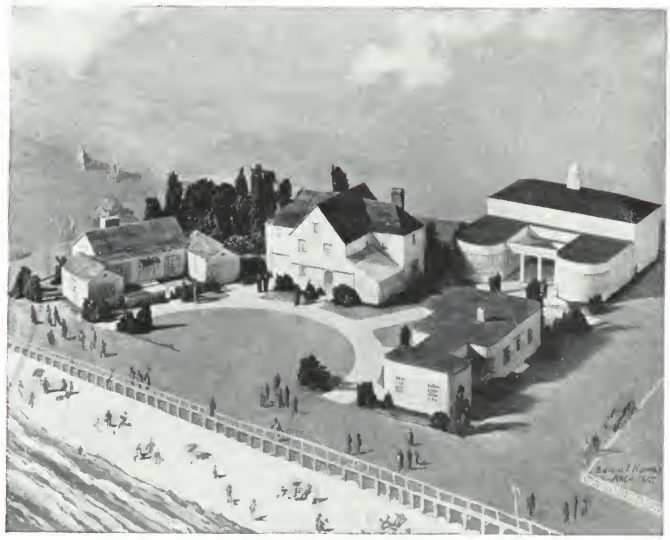
ADVANTAGES — Tufcote's resiliency and stretching qualities obtained from its newly perfected scientific materials and specialized construction make it particularly valuable for home construction. It will not shrink, split, tear away from nails—and meets the most extraordinary building strains and distortions. It offers protection more than adequate against moisture penetration, wind penetration, dust and vermin—factors vitally important to the architect.

FLEXIBILITY — Tufcote's flexibility and stretching qualities make it especially adaptable for use around corners and framing members. It can be creased to any angle without cracking or injury.

Illustrating the use of Tufcote During Construction of the Farmers National Bank Building. See Page 11

Tufcote Being Used for Protecting Concrete Paving in Rhode Island

Tufcote REINFORCED WATERPROOF PAPERS



Model American Village at Atlantic City, N. J.
Tufcote Brand of Building Paper was used

STRENGTH — The double reinforcement of interwoven jute webbing in Tufcote provides against possible damage by rough handling or strong winds.

RESISTANCE TO MOISTURE PENETRATION—One of the most important functions of a waterproof building paper is to resist moisture passage. Knowing that asphalt is an effective moisture barrier if properly used, Tufcote, through its specialized construction, has provided a uniformly thick coating of highest grade odorless asphalt.

WIND, VERMIN AND DUST PROTECTION — Tufcote's high quality asphalt core, protected by two heavy kraft liners and reinforced with strong jute webbing, affords maximum protection at all times against wind, vermin and dust penetration.

TESTIMONIALS—Architects who demand a high quality waterproof paper, specify Tufcote in all types of building construction; whether it is to be used for a small home or a large office building, Tufcote furnishes the required protection. The photograph found on opposite page of the Empire State Building is an excellent testimonial to the waterproofing characteristics of Tufcote. Thousands of dollars worth of Tufcote Reinforced Waterproof Paper was used in the construction of this famous building. The Model American Village, photograph on this page, used one of Tufcote's brand of building papers during its recent construction. There are many waterproof papers on the market but, in the construction of the World's largest and most important buildings, Tufcote's qualities are demanded.

Tufcote Specifications

EXTERIOR WALLS — All exterior sheathing shall be covered with a layer of Tufcote Special Treated building paper. The paper shall be applied horizontally and lapped with at least four (4) inch weather laps. Nail securely with large head, galvanized nails. The Tufcote paper shall be carried over the studs, sills, heads and jambs and around all corners.

ROOFS—All wood roof decking shall be covered with Tufcote Special Treated building paper. Use weather laps not less than four (4) inches and nail securely with large head, galvanized roofing nails. The paper is to be carried over all hips and ridges and at all valleys it is to be carried up a distance not less than eighteen (18) inches on each side.

FLOORS—All sub-flooring is to receive a covering of Tufcote Special Treated building paper. It shall be applied at right angles to the direction of the finished flooring and is to be turned up at least four (4) inches under baseboards at all walls. Nail securely with large head, galvanized nails.

Protecting Concrete and Terrazzo

CONCRETE ROOFS, FLOORS, WALKS AND DRIVEWAYS — Immediately after the concrete has set sufficiently to be safely walked upon, cover completely with Tufcote. Lap all seams at least four (4) inches and seal with tape or waterproof adhesive in accordance with manufacturer's recommendation. Allow covering to be left on outside concrete work for at least ten (10) days and, on inside work, until completion of building.

PROTECTING TERRAZZO—After uniform thickness of sand cushion has been placed over concrete, cover with Tufcote, lapping all joints at least four (4) inches. Follow Terrazzo specifications after laying paper.

After terrazzo has been laid, cover with Tufcote for a period of six (6) days. Lap all Tufcote joints at least four (4) inches and seal with waterproof adhesive. After grinding, re-lay paper to protect terrazzo until completion of building.

Various Tufcote Papers

To enable the architect to specify either highest quality paper or less expensive paper, depending upon its use, the manufacturers of Tufcote make a complete line of Standard and Special Treated papers containing various degrees of reinforcement. A few of these products are listed below:

TUFCOTE No. 1 STANDARD—Two (2) sheets of No. 1 kraft combined with asphaltum and double reinforced with ½ in. mesh jute yarn. Weight—60 lbs. per thousand square feet.

TUFCOTE No. 1 SPECIAL TREATED — Similar to Tufcote No. 1 Standard, with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before combining. Weight—70 lbs. per thousand square feet.

TUFCOTE No. 3 STANDARD—Two (2) sheets of No. 1 kraft combined with asphaltum and double reinforced with 1" mesh jute yarn. Weight—56 lbs. per thousand square feet.

TUFCOTE No. 3 SPECIAL TREATED — Similar to Tufcote No. 3 Standard with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before combining. Weight—64 lbs. per thousand square feet.

TYTEWRAP 33-1 STANDARD — Two (2) sheets of No. 1 kraft combined with asphaltum and double reinforced with a diamond mesh jute yarn. Weight — 40 lbs. per thousand square feet.

TYTEWRAP 33-1 SPECIAL TREATED—Similar to Tytewrap 33-1 Standard with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before combining. Weight—56 lbs. per thousand square feet.

UPCO 30/30 STANDARD—Two (2) sheets of 30 lb. kraft combined with asphaltum. Weight—36 lbs. per thousand square feet.

UPCO 30/30 SPECIAL TREATED — Similar to Upco 30/30 Standard with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before combining. Weight—50 lbs per thousand square feet.

UPCO 25/25 STANDARD—Two (2) sheets of 25 lb. kraft combined with asphaltum. Weight—28 lbs. per thousand square feet.

60/60 BLACK & TAN—60 lb. asphalt saturated kraft sheet and 60 lb. standard kraft sheet combined with asphaltum. Weight —62 lbs. per thousand square feet.

UPCO 60 SATURATED — Single sheet of 60 lb. asphalt saturated kraft. Weight—29 lb. per thousand square feet.

TUFMAT STANDARD — Two (2) sheets of No. 1 kraft combined with two (2) layers of asphaltum and one (1) layer of 7 ounce burlap. Weight—106 lbs. per thousand square feet.

TUFMAT SPECIAL TREATED—Similar to Tufmat Standard with the exception that both sides of each kraft liner are treated with a specially prepared asphaltum before combining. Weight—120 lbs. per thousand square feet.

STANDARD ROLL SIZES—250 to 1800 sq. ft. in 36, 40, 48, 54, 60 and 72 in. widths. Special widths up to 98 in. available.

At Left: Tufcote used in construction of Empire State Building, New York, N. Y.

At Right: Tufcote was used during construction of Farmers National Bank Building. See Page 9

SILVERCOTE

BRAND OF

REFLECTIVE INSULATION

TUFCOTE

REINFORCED
WATERPROOF
BUILDING PAPER

SPECIALTY CONVERTERS, INC.

GENERAL OFFICES **EAST BRAINTREE, MASS.**

MILLS: EAST BRAINTREE, MASS. · CLEVELAND, OHIO
SOUTH WINDHAM, MAINE

SECTION 10

CONTINUED ⟶

F. E. SCHUNDLER AND COMPANY, INC.

INSULATION DIVISION

Pioneers and Specialists in the Development and Manufacture of Vermiculite Products

NEW YORK PLANT: 45-15 Vernon Boulevard, Long Island City, N. Y.

JOLIET PLANT: 504 Railroad Street, Joliet, Ill.

SCHUNDLER INSULATING PRODUCTS

There is a Schundler Insulation for every purpose in both the industrial field and the building field. Schundler Insulations are based on two well-known insulating materials — namely — Expanded Vermiculite, which was developed and pioneered by Schundler, and Rock Wool.

Schundler offers the following insulation products:

Mica Pellets, Rock Wool, Kwiltex, Mineral Roof Insulation, Insulating Cements, Light-weight Insulating Concrete, No. 121 Block and Pipe Covering Insulation, and also a complete line of Insulating Refractory Combustion Chamber Assembly Units.

All materials are laboratory controlled and manufactured to set specifications, offering the architect and engineer outstanding performance in its particular field.

Write for bulletins and any information necessary on any of our products described or listed.

SCHUNDLER MICA PELLET INSULATION

Winter Economy—Summer Comfort

Crude vermiculite is transformed by the Schundler Process into an ideal loose-fill, free-pouring insulation that exerts a positive control over heat travel by preventing radiation, conduction and convection.

Radiation — The never-changing golden glitter of the shiny, polished surfaces of the exploded pellets positively deflect radiant heat.

Conduction — The millions of tiny entrapped air cells hold back heat and prevents its travel through the mass of insulating material.

Convection — Schundler Pellets fill all open spaces easily and block the transfer and circulating currents of heat by convection.

Schundler Mica Pellets

Easy to Install—Fire and Vermin Proof

Specify Schundler Mica Pellets for constant density, absolute fireproof and vermin-proof properties, non-metallic and dielectric qualities, cleanliness, permanent sound deadening and ease of application.

No cutting or fitting is required. Odorless, sterile, mat-proof, non-fibrous — controlled reactions are independent of chemical formulae. Schundler Mica Pellets cannot be stretched or extended by air pressure.

Guaranteed not to mat or pack; a non-conductor of electricity; its quality is constant as it is a natural mineral; harmless to handle; free from sulphur, lead, glass or "shot."

Schundler Mica Pellets are endorsed by leading engineers and utilized by an increasing number of builders.

Outstanding Features

Schundler Mica Pellets form a natural dual insulator, insulating both by its multiple dead-air cell construction, and by its glittering, flaky reflecting surface. Under actual building conditions, Mica Pellets have been proved to be 8% more efficient in insulation value than competitive materials. A wall filled with Mica Pellets is 73% better than a wall containing no insulation.

Send for Professor Joseph A. Babor's report on this test.

Simply Installed by Pouring to a Depth of Several Inches Between Ceiling Joists in the Attic

Covering Capacity

Pellets are packed in plainly marked bags containing 4 cu. ft. each. Between studding, floor beams or rafters spaced at 16 in. centers—one bag will cover approximately 27 sq. ft.—2 in. thick; 18 sq. ft.—3 in. thick; 13½ sq. ft.—4 in. thick. Insist upon the name Schundler on every bag.

SCHUNDLER ROCK WOOL

An Insulation in Batt and Loose Form for Wall and Ceiling Applications

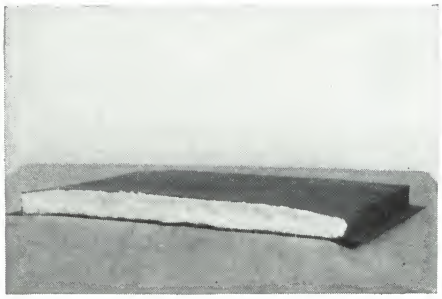
Supplied in batt form and also in loose fibre form this mineral wool is highly recommended for its insulation value. It is supplied in forms to meet every kind of building insulation application, and is extremely easy to handle.

Schundler Rock Wool is fireproof, sound deadening; it cannot deteriorate or decay — is odorless, clean and resists the intrusion of vermin of all kinds.

Schundler Rock Wool batts offer a high degree of insulation, as they are manufactured from a very fine fiber wool, and held together with a permanent binder. They are manufactured to a uniform density which insures a uniform insulation job at all times. Schundler Rock Wool batts are secured to a moisture-proof paper backing which, when nailed to the studding, holds the batt in place, and also reduces the hazard of condensation of moisture in the insulation. Schundler Rock Wool batts are supplied in sizes 15 in. wide by 23 in. and 48 in. long and in thicknesses of 2 in. and wall thickness, and are packed in corrugated paper cartons.

SCHUNDLER KWILTEX

COMPLETELY SEALED HOME INSULATION



Kwiltex is a completely sealed home insulation made from the finest grade of mineral wool completely enclosed in 60-lb. asphalt saturated kraft paper, the inside of the paper being heavily coated with moisture-proof asphalt. There is a flange on each side, as shown in the adjoining illustration for securing Kwiltex to the wooden members of the building. A flange on the end of each section provides an overlapping layer of paper that covers each joint.

Kwiltex is made in semi-rigid sections 4 ft. long, and, as an additional feature, has doubly sealed and doubly reinforced corners.

Moisture-proof—Wind-proof—Fire-proof

Kwiltex is positively moisture-proof because of the 60-lb. asphalt saturated kraft paper which is lined with a thick membrane of waterproof asphalt. This completely seals the insulation, thereby preventing condensation in the material and protects the insulation from becoming wet in any way.

The heavy kraft paper also makes Kwiltex windproof, which will materially reduce draughts in a house and also reduce heat losses due to air leakage through the walls and roof.

Kwiltex is also fireproof, being made from mineral wool, which has long been recognized as a fireproof material, enclosed within an asphalt saturated kraft paper, which is fire-resisting.

Permanent—Efficient

Kwiltex is permanent, being made from rock wool which is a mineral product and, therefore, it will not rot, decay or deteriorate in any way. This insulation will not settle, as it is attached to the wooden members of the building and, once properly installed, will remain in place indefinitely.

Kwiltex is highly efficient in insulating value as it is made from rock wool, which has long been known to be an efficient insulator, and in addition to this, it is completely sealed in heavy kraft paper which affords additional efficiency. Also, because of the flanges on the sides, it is definitely spaced between the studding so that an insulating air space is formed on both sides of the material. The K factor of Kwiltex is .25.

Specifications

Kwiltex comes in sheets 4 ft. long which are 14⅜ in. wide to fit snugly between 16 in. center studs and joists. This insulation is made in thicknesses of 1 and 2 in.

Kwiltex 1 in. thick is packed 12 sections per carton, which will cover 64 sq. ft. of area.

Kwiltex 2 in. thick is packed 6 sections per carton, which will cover 32 sq. ft. of area.

THE BARRETT COMPANY

40 Rector Street
NEW YORK, N. Y.

2800 So. Sacramento Avenue
CHICAGO, ILL.

Fairfield P. O.
BIRMINGHAM, ALA.

THE BARRETT COMPANY, LIMITED, MONTREAL, QUE.

For Complete Catalog on Barrett Built-up Roofing, Roof Flashing, Drainage, Waterproofing and Dampproofing, see File Index

BARRETT ROCK WOOL INSULATIONS

Why to Insulate

Today modern buildings of all kinds—residences, schools, churches, stores, offices, warehouses, factories, etc.—require insulation against excessive transmission of heat, cold and sound. The Barrett Company, with a background of 85 years of building experience, supplemented with years of experimentation on the subject, believes, along with the preponderance of architects, construction engineers and builders, that Rock Wool offers by far the greatest insulation value for all types of buildings.

Persons modernizing existing buildings, as well as those erecting new ones, are fully aware of the benefits of Rock Wool Insulation. Friends and neighbors, who have had their homes so insulated, have proved to them that the interiors are more comfortable the year around—cooler in the summer, warmer in the winter, not more than two degrees temperature difference between rooms on adjacent floor levels (first and second, or second and third floor rooms), free from drafts and cold floors; all resulting in more healthful living conditions.

In addition, winter heating costs are lower, existing heating plants may be operated at lower rates, resulting in longer life, or more rooms may be heated without increasing the sizes of heating plants. New heating systems may be smaller sizes (less expensive).

Rental, loan and resale values are increased by Rock Wool Insulation. Redecorating costs are reduced because redecorating is not necessary so often and interiors are more restful because outside sounds do not pass so readily through Rock Wool-insulated walls. The Rock Wool blanket around a building so effectively retards the spread of fire that losses from this cause are minimized.

It is not too much to predict that in the near future no house, either new or old, can be marketed readily without insulation in the outside walls and roof or top floor ceiling. Discriminating buyers and builders of new homes now insist on fully insulated construction. Owners of rented living, working and storage spaces are now increasing their incomes through insulating their property.

Characteristics of Rock Wool

Barrett Rock Wool is a mineral wool made by melting a high silica limestone. The resulting liquefied rock, at between 2500° and 3000° F., is "blown" with a jet of steam, forming a fibrous wool-like material which contains over 90% dead air cells. These cells, which resist penetration by cold, heat and sound, give Rock Wool an unusually low conductivity—the correct measure of efficiency for all insulating materials.

Permanent—Fireproof—Light Weight—Safe—High Quality

Because it is made from rock, Barrett Rock Wool is a permanent type of insulation that will not deteriorate with age. It is a fireproof material that is also vermin-resistant, odorless and clean. Its light weight makes for ease and economy in handling. It is a non-conductor of electricity. The (insurance) Underwriters' Laboratories, Inc., approves it as safe for use in buildings meeting the requirements of their electrical code. It is supplied only in high and uniform quality—free from impurities and extraneous material.

Economy—Both in First Cost and Installation

A distinct advantage of Barrett Rock Wool is the comparatively low cost of the material itself—and, being light weight, it is easy to handle and can be applied quickly, keeping labor costs at a minimum. Various forms of Barrett Rock Wool are available as follows:

Applying Barrett VB Batts in Side Wall

VB Batt—Type V-23

Batts

Mainly used in the insulation of new structures, or for unfinished rooms and attics. Batts are made to fit between standard studs, roof rafters and floor joists, and can be cut to fit snugly into other areas, such as around window casements, door frames, etc.

Barrett Rock Wool Batts are sufficiently rigid to be self-supporting and to be applied with minimum labor.

For greatest results the full thickness is recommended, although semi-thick batts may be used in walls for economy.

VB Batts are furnished with a special water repellent, vapor resisting paper backing which has a 1½-in. flap on

all edges for lapping over adjacent batts and building framing to insure a vapor seal.

Standard Batts are furnished without paper backing and can be backed after installation with Barrett Black Shield Building Paper or other effective vapor-barrier membrane.

BARRETT ROCK WOOL BATTS FURNISHED IN SEVERAL SIZES

Batts—Full Thick

Type V-43—VB (Paper-backed)—size 15″x48″: carton 5 pcs. 25 sq. ft.
Type V-23—VB (Paper-backed)—size 15″x23″: carton 8 pcs. 19.16 sq. ft.
Type S-23—Standard .....—size 15″x23″: carton 7 pcs. 16.77 sq. ft.

Batts—Semi Thick

Type V-42—VB (Paper-backed)—size 15″x48″: carton 8 pcs. 40 sq. ft.
Type V-22—VB (Paper-backed)—size 15″x23″: carton 12 pcs. 28.75 sq. ft.
Type S-22—Standard .....—size 15″x23″: carton 12 pcs. 28.75 sq. ft.

Demi Batts—Full Thick

Type D.....size 9″x16″; carton 20 pcs. 18.75 sq. ft.

Granulated

Barrett Blowing (Granulated) Rock Wool is used for insulating existing buildings. It is installed through side walls and in attic spaces—by the blowing method. The installation machine, operating outside the building, packs the rock wool by pneumatic pressure. Barrett Blowing (Granulated) Rock Wool is designated as:

Type GS—Blowing—weight per bag, 35 lbs.

Loose

Barrett Loose (long fibre) Rock Wool is an alternative material, used both in side walls of new construction and for packing attic floors and ceilings. It comes in two types, as indicated below:

Type L Loose (long fibre) Wool—weight per bag, 35 lbs.

Type P Improved Loose Wool—size 9 in. x 15 in. by full thick—bags 18 pieces 18.67 sq. ft.

SPECIFICATIONS FOR FURNISHING AND INSTALLING BARRETT ROCK WOOL BATTS

Barrett Rock Wool Batts shall be furnished and installed by the contractor as follows:

The building shall be completely insulated as specified herein and as shown on the drawings, so as to provide a continuous blanket of insulation over the entire area specified.

Exterior wood frame walls shall be completely filled with insulating material from top of foundation walls to roof.

Exterior solid masonry walls shall be waterproofed on the inner face (by others) before the insulation is installed. The insulating material shall be installed between the furring strips (minimum depth 2″) from top of foundation wall to roof.

Unfinished attic spaces shall be filled with insulating material between all ceiling joists. Alternate: between all roof rafters, gable end studs, in dormers, etc.

Finished attic spaces shall be filled with insulation between attic ceiling joists, roof rafters, gable end studs and in dormers.

Heated portions of the building extending beyond the main walls so that they are exposed on the under side, (*i.e.* sun parlor, room over porch, etc.) shall have the spaces between floor joists filled with insulating material.

Garage attached to building shall have insulating material in all wall spaces between the garage and building. Alternate for heated garage: in all outside garage walls and garage ceiling but not in wall between garage and building.

Garage under building shall have the ceiling spaces filled with insulating material.

Pipes and other equipment containing water and extending outside of the insulated portions of the building shall be protected from freezing.

Spaces outside the insulated portions of the building, such as attics, shall be adequately cross ventilated to the outside air, preferably through louvre ventilators at opposite ends of such spaces.

All insulation shall be installed in accordance with the manufacturer's printed instructions therefor, found in all packages and in accordance with the practices recommended by the National Mineral Wool Assn.

SPECIFICATIONS FOR FURNISHING AND INSTALLING BARRETT GRANULATED WOOL BY THE PNEUMATIC METHOD

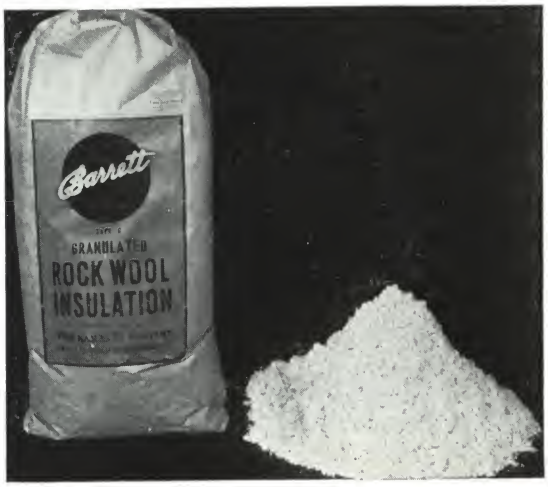
Barrett Granulated Rock Wool shall be furnished and installed by a Barrett Approved Home Insulation Contractor.

The building shall be completely insulated as specified herein and as shown on the drawings so as to provide a continuous blanket of insulation in all exterior walls above the foundation walls and in roofs, attics, ceilings and garages where necessary.

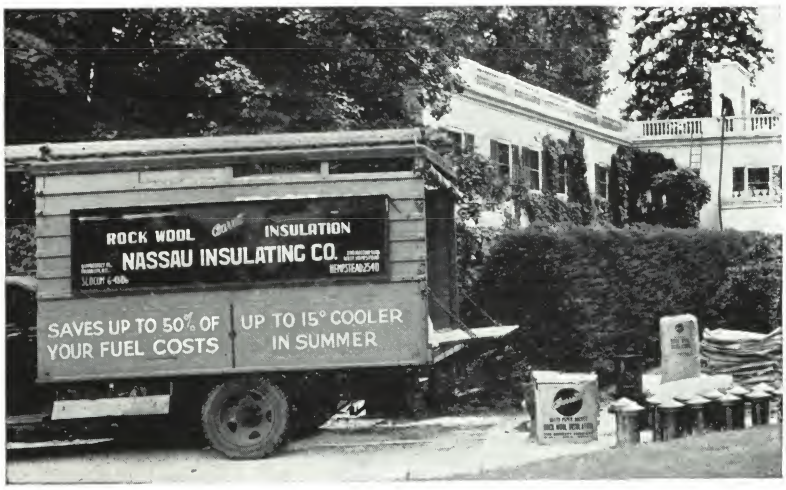
The insulating material shall be applied uniformly by the pneumatic method or manually where this is impossible or impractical and to a thickness of not less than 3⅝″ except where space provided is less than this, in which instance the insulation shall fill the space. The insulation density when in place shall not exceed 10 lbs. per cubic foot.

The contractor shall furnish all materials, labor, equipment and services necessary and there shall be no special or additional work, materials, etc., required of other contractors in connection therewith.

All openings necessary for installing the insulation and all closing, patching, refinishing, etc., of walls, roofs, etc., shall be done by the Home Insulation Contractor.



Granulated Rock Wool



Barrett Blowing Equipment in Front of a Residence

SAMUEL CABOT, INC.

Building Insulation

141 Milk Street, BOSTON, MASS.

For Branch Offices and Agents, see our pages on Stains and Collopakes

Products

HEAT-INSULATING and SOUND-DEADENING "QUILT."

For Shingles, Stains, Collopakes (for every paint use), Waterproofings, Wood Preservatives, see File Index.

Cabot's Heat-Insulating and Sound-Deadening "Quilt"

Uses—For insulating houses and other buildings to make them warm in winter and cool in summer; for insulating cold storage and ice houses; refrigerators; for deadening sound in floors and partitions of apartments, hotels, hospitals, schools, etc.

Cabot's

Heat-Insulating Sound-Deadening

"Quilt"

Samuel Cabot Inc.

Cabot's "Quilt" Applied to Walls, for Heat Insulation

Description—Cabot's "Quilt" is a felted, flexible matting of Zostera Marina, a marine plant, stitched between two layers of strong Kraft paper. Zostera Marina forms a structure full of tiny dead air cells, which give it tremendous insulating value.

"Quilt" has a thermal conductivity (K) of 0.25 B.t.u. per hour, per square foot per inch thickness per degree difference in temperature at 90° F. Figures for other insulations range from 0.27 to 0.33, showing that "Quilt" gives from 8% to 30% more insulation. These figures are based on tests made by the U. S. Bureau of Standards.

Permanent—Cabot's "Quilt" is not affected by moisture and will not rot, deteriorate, get foul, or harbor vermin. It does not settle, and therefore retains its full insulating value during the entire life of the building. This is proved by over 40 years of successful experience.

Fire Resistant—Standard "Quilt" is highly fire resistant, and will not support combustion. Anti-Pyre "Quilt" has a specially treated fire-resistant paper and meets the most rigid requirements of fireproof construction.

Application—"Quilt" is easily cut with an ordinary knife or shears. No skill is needed to apply it, and so the cost of installing "Quilt" is very low.

Widths—18-in. width, for quick application between studs and roof rafters; and the standard 36-in. width.

Thickness	Approx. thickness, in.	Width, in.	Shipping weight, lbs. per roll	Sq. ft. per roll
Single Ply	⅓	36 18	40 20	250 125
Double Ply	½	36 18	65 32½	250 125
Triple Ply	⅔	36 18	90 45	250 125
Inch "Quilt"	1	36 18	65 32½	125 63

Special Types—Anti-Pyre—fire retarding "Quilt"; Waterproof "Quilt" made with waterproof paper covering; Asbestos "Quilt" (Single, Double and Triple-ply only) covered with asbestos paper.

Standard Method of Application and Conduction Values

Following are given 10 standard methods of applying Cabot's "Quilt" for heat insulation together with the K, or heat conduction values, figured in all cases for Double Ply (XX) "Quilt." Conductivities will be decreased still further by the use of Triple Ply (XXX) or Inch "Quilt."

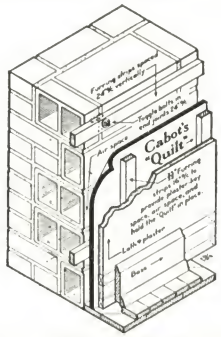


Fig. 1. Brick Veneer on Hollow Tile Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.123

(If Quilt is omitted K equals 0.186)

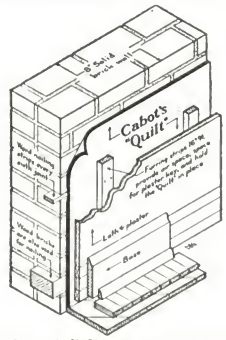


Fig. 2. 8" Solid Brick Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.179

(If Quilt is omitted K equals 0.250)

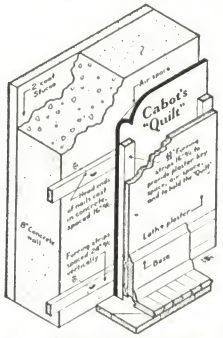


Fig. 3. Stuccoed Concrete Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.160

(If Quilt is omitted K equals 0.285)

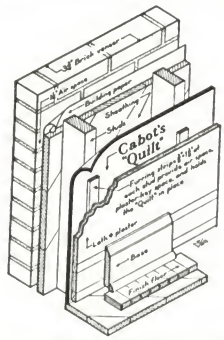


Fig. 4. Brick Veneered Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.122

(If Quilt is omitted K equals 0.207)

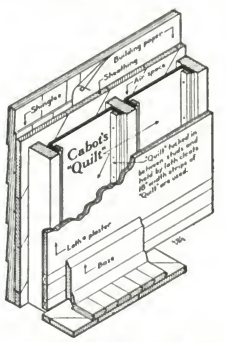


Fig. 5. Shingled Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.152

(If Quilt is omitted K equals 0.252)

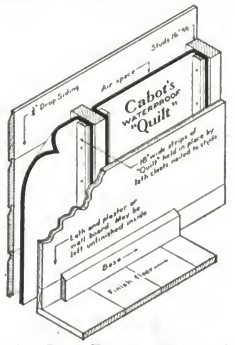


Fig. 6. Low Frame Wall. Economical Construction. Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.168

(If Quilt is omitted K equals 0.318)

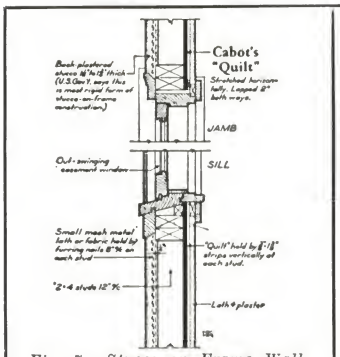


Fig. 7. Stucco on Frame Wall. Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.191

(If Quilt is omitted K equals 0.380)

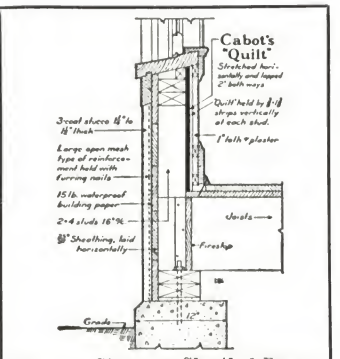


Fig. 8. Stucco on Sheathed Frame Wall Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.167

(If Quilt is omitted K equals 0.296)

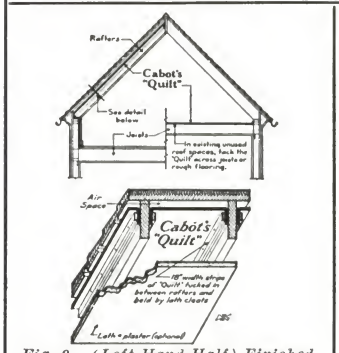


Fig. 9. (Left-Hand Half) Finished Attic Insulated with Cabot's Double Ply Quilt Between Rafters

K (conductivity): 0.161

(If Quilt is omitted K equals 0.288)

(Right-Hand Half) Unfinished Attic. Unheated

K (conductivity): 0.141

(If Quilt is omitted K equals 0.262)

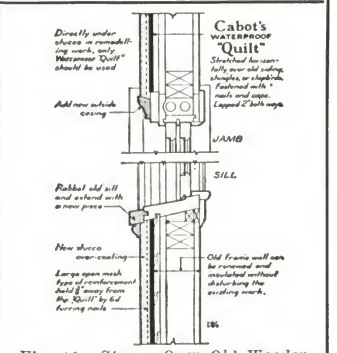


Fig. 10. Stucco Over Old Wooden Frame Wall (Remodeling) Insulated with Cabot's Double Ply Quilt

K (conductivity): 0.186

(If Quilt is omitted K equals 0.283)

Fuel Saving

The approximate fuel saving obtained by heat insulation with Cabot's "Quilt" as shown and specified above may be secured as follows: Buildings with conductivities (when insulated) of 0.16 will show a heat saving of approximately 39-43 per cent, as compared to uninsulated structures. In some cases the saving is even greater.

Tests

Conductivity and heat saving values of Cabot's "Quilt" are fully covered by tests made at the U. S. Bureau of Standards. (U. S. Letter Circular No. 227, Bureau of Standards, Washington, D. C., and Tests made at Massachusetts Institute of Technology.) Copies of these will be forwarded on your request.

Residence in Redding Ridge, Conn.

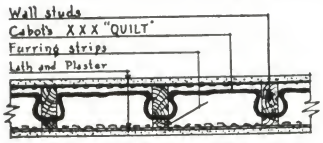
EVANS, MOORE & WOODBRIDGE, Architects
Insulated with Cabot's Double-ply Waterproof Quilt
Painted with DOUBLE-WHITE

Cabot's "Quilt" for Sound-Deadening

Cabot's "Quilt" is the first material ever made for scientific deadening of sound. Sound travels in waves; "Quilt" breaks up these waves and absorbs them in its elastic cushion. One layer of Triple Ply "Quilt," properly installed, will cut off 85% of the sound passing through a wall. For this reason, "Quilt" is used extensively in schools, apartments, hotels, hospitals, and broadcasting stations.

Diagrams below show some common methods of sound-deadening with Cabot's "Quilt." Sound reduction percentages are based on tests made at Massachusetts Institute of Technology. For full report of these tests and more illustrative diagrams, please ask for a copy of Laboratory Bulletin No. 5-A.

Sound-Deadening Partitions (Wood Construction)



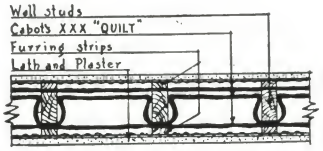
SOUND REDUCTION 67%

Left:

Specifications—In this case a layer of Cabot's XXX (Triple-Ply) "Quilt" is wrapped around the stud on one side before lathing. The "Quilt" is carried away around each side of the stud and fastened with nails and caps as shown. Furring strips are then applied to face of studs and lath applied to these strips, leaving the "Quilt" between. A sound reduction of 67% results from this construction.

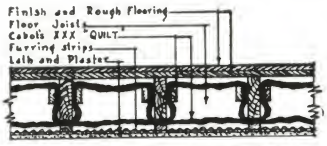
Right:

Specifications—In this type of construction, three layers of Cabot's XXX (Triple-Ply) "Quilt" are applied as shown. First, a single layer is wrapped around the studs, then two flat layers on each face of studs. Furring strips are then applied on both sides and then lath and plaster. This construction effects a sound reduction of 91%. Only 9% of the original sound transmitted, without insulation, can penetrate.



SOUND REDUCTION 91%

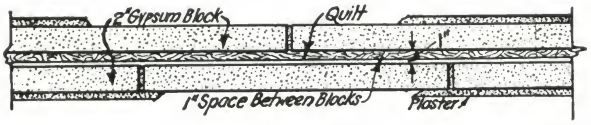
Sound-Deadening Floors (Wood Construction)



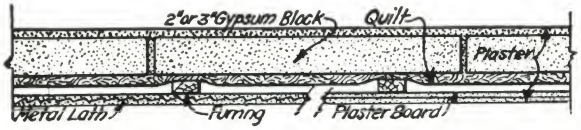
SOUND REDUCTION 60.6%

Specifications—In this case essentially the same method is employed, as above, except that here the "Quilt" is applied beneath the floor timbers, bent around each one and secured in place by light lath or strips as shown. An additional layer of "Quilt" is stretched loosely along the bottom of the timbers which are then furred, lathed and plastered in the usual manner.

Sound-Deadening Partitions in Fireproof Apartments, Office Buildings, etc.



Specifications—For most effective sound-proofing with Gypsum Block Partitions, lay up double partitions of 2-in. Gypsum Block with 1-in. space between, within which Double-Ply or Triple-Ply Cabot's "Quilt" is to be hung. Plaster directly on outside of blocks.



Specifications—With single Gypsum Block Partitions nail "Quilt" vertically to one or both sides, apply furring strips or metal lath and plaster, or apply plaster board to outside surfaces.

Acoustical Correction, Elimination of Echo

Cabot's "Quilt" has wide use in this connection, for acoustical correction of theatres, office buildings, churches, etc. Problems of this kind are individual in nature. Our engineers will be glad to assist you on problems of this kind.

Samples and Co-operation with Architects

Samples of all types of "Quilt" with full information promptly sent on request. We are always ready to co-operate fully, without obligation, on any question of heat insulation or sound deadening and to place our experience of over 40 years at your disposal.

ESTABLISHED 1873

THE PHILIP CAREY COMPANY

Manufacturers of Heat Insulation and Asbestos Products

LOCKLAND, CINCINNATI OHIO

ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BOSTON, MASS.
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MINNEAPOLIS, MINN.
NASHVILLE, TENN.
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PITTSBURGH, PA.
ST. LOUIS, MO.
SEATTLE, WASH.
WASHINGTON, D. C.
WHEELING, W. VA.

For pages on Carey Built-up Roofing, Shingles, and Heat Insulation, see File Index

CAREY "VAPOR STOP" AND CAREY "ROCKTEX" WOOL

Carey ROCKTEX

Modern improvements in construction and equipment have tended to increase the amount of humidity in the home. In order to prevent undesirable condensation it is important to prevent the passage of moisture from the interior of the building outward to the colder outside air. For these reasons leading authorities recommend the use of a vapor barrier on walls, roofs and exposed floors and ceilings.

Carey Vapor Stop is designed and manufactured to provide the maximum resistance to the passage of moisture and exceptionally high resistance ratings have been shown by tests in leading testing laboratories. Vapor Stop is applied directly under the lath or plaster base. It should not be used as a building paper because of its high rating as a vapor barrier.

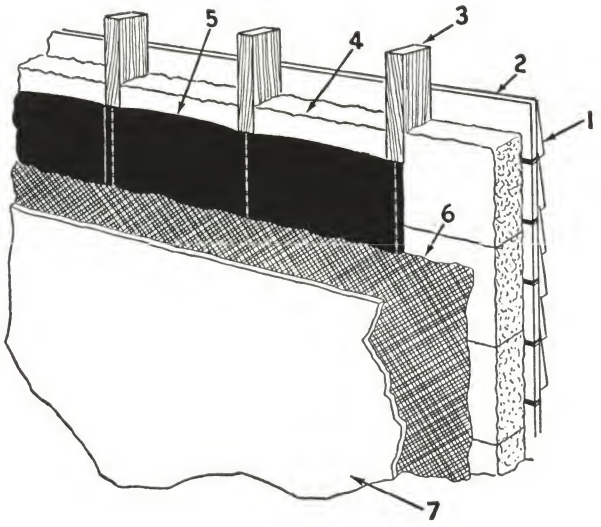
Carey Vapor Stop is manufactured from a felt base material, highly saturated with asphalt and coated with asphalt on both sides. Sheets are 36-in. wide and weigh approximately 50 pounds per roll of 500 sq. ft. One face of the Vapor Stop is marked with aluminum lines spaced on proper centers for standard spacing of studs, joists and other framing members. The reverse side is plain and can be marked with a red pencil for odd spaced framing.

Stop vapor before it reaches the dew point—specify Carey Vapor Stop.

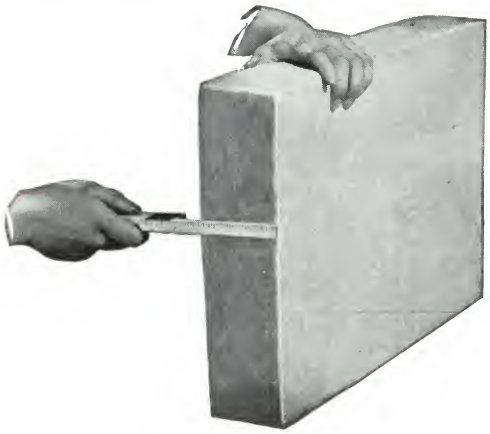
Application of Vapor Stop

Proper application of Vapor Stop is shown in the detailed sketch at the right:

1. Siding or veneer exterior
2. Sheathing and building paper
3. Studs
4. Carey Rocktex Bats
5. Carey Vapor Stop
6. Lath
7. Plaster



Instructions for Applying—Cut to lengths to reach from floor to ceiling plate. Nail each sheet in place with all vertical joints lapped about 1½ ins. Due to the nature of this material, it is not necessary to seal the laps where located on a framing member. At cutouts for electrical connection or piping the opening should be boxed flush with the studs or joists. Nail Vapor Stop to boxing. At horizontal laps between framing members, place a nailer between studs or joists and lap Vapor Stop about 4 ins. nailing same in place. In case Vapor Stop is punctured, seal all holes by cementing a patch of Vapor Stop in place with lap cement. Vapor Stop is lined for 16 in. c.c. spacing of studs. In case of odd spaced framing, turn sheet so lines are hidden and line the location of studs on Vapor Stop with pencil provided for this purpose. Vapor Stop may be quickly applied with an automatic stapling hammer.



Specify Full Insulation of Rocktex

Today many terms are used to qualify the thickness of insulation.

Carey Rocktex "Wall Bats" are standard thickness—they are manufactured to fit standard spacing of 2 x 4 in. studs.

Thermal Conductivity—Carey Rocktex Bat Conductivity (k factor) is 0.25 Btu/hr./sq. ft./in./°F when tested at a mean temperature 75° F.

Carey Rocktex Bats are ideal for new construction because of their ease of application. They are easily fitted into irregular spaced framing and no material is lost through cutting since cut-off pieces may be used for caulking cracks around windows and doors.

Permanence—Rocktex (Rock wool) Products are manufactured from minerals having a balanced analysis—*this insures the permanence of the fibre*—all Rocktex Home Insulations are water-repellant and fireproof.

In addition to Bats and Pads, Rocktex Products for Home Insulation include Loose Wool and Granulated Wool.

MATERIALS AND APPLICATION GUIDANCE—NEW CONSTRUCTION

For Walls

Use—Rocktex Loose Wool, Bats and Pads are satisfactory for use in walls of new construction. Regardless of the type of insulation used, insulation should be applied in uniform density and care taken to leave no void spaces. In all cases, the coverage instructions on the package should be followed.

Specifications—Carey Rocktex "Wall Bats" to be installed between the studs in all outside walls. All insulation to be covered with Carey Vapor Stop nailed to the face of the studs. See first page.

Alternate: Carey Rocktex (Loose-Pad) wool to be packed to full depth of all outside wall studs. All insulation to be covered with Carey Vapor Stop nailed to the face of the studs. See first page.

For Ceilings

Use—Rocktex Loose Wool, Granulated Wool, Bats or Pads are available and satisfactory. Loose wool is spread by opening the material and packing lightly, but firmly in place. Granulated is poured in place and leveled to the desired thickness. Rocktex Bats and Pads are fabricated to fit framing construction however are easily cut with a knife to fit odd spaced framing.

Specifications—Carey Rocktex "Wall Bats" to be installed between all top floor ceiling joists. All insulation to be covered with Carey Vapor Stop nailed to the face of the joists where lath is to be applied. See first page.

Alternate: Carey Rocktex (Loose—Granulated—Pad) wool to be packed between joists above the top floor ceiling and to be installed "wall thick." All insulation to be covered with Carey Vapor Stop nailed to the face of the joists where lath is to be applied. See first page.

For Roofs

Use—Rocktex Loose Wool, Granulated Wool, Bats or Pads may be used in this area, however, the bulk or fill type material must be supported with a suitable backing to be specified by the architect. Prefabricated products may be held in place with a lacing of soft wire or by the backing which is attached to paper backed bats.

Specification—Carey Rocktex "Wall Bats" to be installed between the roof rafters and held in place (by tacking the flange on the paper backing) (with a lacing of soft annealed iron wire) (by nailing a suitable backing) to the face of the rafters. All insulation to be covered with Carey Vapor Stop nailed to the face of the rafters. See first page.

Alternate: Carey Rocktex (Loose—Granulated) wool to be packed between the rafters to a depth of not less than 4 in. and to be held in place with (a suitable backing) nailed to the face of the rafters. All insulation to be covered with Carey Vapor Stop nailed to the face of the rafters. See first page.

***(Note:** Suitable backing to be specified by the architect.)*

FOR EXISTING STRUCTURES

You can also specify Rocktex for existing structures.

Homes that were built before it was a proven fact that insulation was so important in the home may now have the benefit of good insulation.

The illustration at the left shows how Rocktex may be blown into the top floor ceiling area.

At the right is shown how the side walls of the home already built may be treated.

Literature and Samples

Samples, descriptive literature and more complete information may be had by calling on The Philip Carey Branch, Distributor or Applicator located in your city or by writing The Philip Carey Company, Lockland, Cincinnati, Ohio.

THE EAGLE-PICHER SALES COMPANY

INSULATION DIVISION
GENERAL OFFICES
Temple Bar Building, CINCINNATI, OHIO

BALTIMORE, MD., 359 Guilford Ave.
BOSTON, MASS., 314 South St.
BUFFALO, N. Y., 1200 Niagara St.
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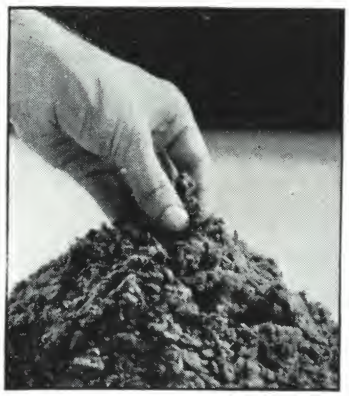
CINCINNATI, OHIO, Temple Bar Building
CLEVELAND, OHIO, Broadway and E. 9th St.
DALLAS, TEX., 2215 Laws St.
DETROIT, MICH., 1627 W. Fort St., Room 406
JOPLIN, MO., C and Porter Sts.
KANSAS CITY, KAN., Southwest Blvd. and State Line
MINNEAPOLIS, MINN., 437 Harding St., N.E.
NEW ORLEANS, LA., 411 So. Peters St.
NEW YORK, N. Y., 420 Lexington Ave.
PHILADELPHIA, PA., Delaware Ave. and Lombard St.
PITTSBURGH, PA., 1713 Liverpool St., N.S.
ST. LOUIS, MO., 3832 Market St.
TULSA, OKLA., Thompson Bldg., Room 312

For Lead Pigments for Paint, see File Index

EAGLE MINERAL WOOL HOME INSULATION



Eagle Home Insulation Spun from Mineral Rock

Eagle Insulation for homes and buildings is a fluffy, woolly material, spun from minerals which were selected after years of research in the extensive Eagle Picher Laboratories. These selected minerals are melted at high temperature and passed over steam, which blows the material out into a mass of woolly fibers.

Honeycombed with a maze of dead air cells, Eagle Insulation forms an extremely efficient barrier to the transfer of heat by conduction and convection. The solid portions of the material retard the flow of heat by radiation.

Available in Batts or Granulated Form

In order to facilitate installation in all types of buildings, whether in process of construction or already built, Eagle Insulation comes in batt or "pillow" form, and also in granulated wool form. The various types are listed in full detail in the specification section, beginning on the third page of this section.

The batts, which are light in weight and easily handled, are best adapted to buildings in process of construction, while the granulated form is used chiefly for old homes, where it can be blown into position by a special pneumatic process requiring no building alterations. Authorized Eagle-Picher installation contractors are located in most large cities.

Bureau of Standards Establishes Thermal Conductivity as 0.27 at 103° F.

The conductivity rating of Eagle Insulation was determined and is supported by the U. S. Bureau of Standards, an authoritative and unbiased testing laboratory. The rating given was 0.27 B.t.u. per sq. ft., per hour, per inch thickness, per degree Fahrenheit temperature difference between sides. In other words, the thick 3⅝ to 4-in. layer of Eagle Insulation usually installed in walls and roofs stops the flow of heat far more efficiently than a 12-ft. thickness of solid concrete (Conductivity 12.00).

This low conductivity rating was determined at a mean temperature of 103° F. At a lower temperature than 103° F., the conductivity of Eagle Insulation would, of course, be even lower than 0.27.

The insulating value of a "wall thick" layer of Eagle Insulation as compared with several building materials is shown in the chart on the next page. Note that the insulating value of Eagle Insulation is many times greater than that of any of the building materials. The insulating value of Eagle Insulation *in combination with* any of these materials would be shown by the added lengths of the heavy line for Eagle Insulation and the heavy line for the other material. Thus, it can be seen that the insulating value of an ordinary frame wall is approximately *quadrupled* by the addition of Eagle Insulation.

Eagle Batt Insulation

Brings Year 'Round Comfort and High Fuel Savings

Because of the ability of Eagle Insulation to retard heat flow, it enables the property owner to keep the rooms as much as 15° cooler than outside in summer. There is rarely more than one degree difference between upstairs and downstairs temperatures, winter or summer. In winter, the entire house can be kept comfortably warm and draft-free, using a heating unit as much as 40% smaller than would be required in an uninsulated building. When Eagle Insulation is installed in buildings already built, it makes them easier to heat and results in fuel savings of as high as 40%.

Accepted by Leading Cities as Fireproofing Medium

Eagle Insulation is not only "flameproof," but fireproof far above the temperature of ordinary fire. It therefore greatly reduces the fire hazard in homes by retarding the spread of fire through insulated areas. Hollow wall spaces, which ordinarily act as flues in case of fire, are filled with a material which even a blowtorch cannot ignite.

As a result of tests conducted at Columbia University, the New York City Bureau of Buildings gave full approval to the use of Eagle Insulation "where fire retarding is required under the provisions of the Building Code and the Multiple Dwelling Law." Other large cities have granted similar acceptance.

High Sound-Deadening Value

Bureau of Standard tests show that a 2-in. layer of Eagle Insulation absorbs 87% of all 512 cycle frequency sound striking it, a rating which compares favorably with materials manufactured specifically for acoustical purposes. It is therefore of valuable assistance in helping to reduce sound transmission between rooms, and helps to keep out the unpleasant din of street cars, auto horns and other noises.

Cuts Cost of Air Conditioning

The low conductivity of Eagle Insulation is of special importance in buildings which are or will be air-conditioned. Experience has shown that when this material is installed in the walls and roof of a building already air-conditioned, the operating costs of the equipment are reduced as much as one-third. A similar saving is effected in the original cost of equipment, since a much smaller conditioning unit is entirely adequate in an Eagle-Insulated building.

Sheds Water—Lasts a "Housetime"

One of the most outstanding features of Eagle Insulation is its natural water-repellency, which acts as a safeguard against loss of efficiency through absorption or chemical reactions with water. Samples exposed by the Underwriters' Laboratories to a completely saturated atmosphere for 200 hours gained less than three-hundreds of one percent in weight, showing negligible absorption. Eagle Batts have a waterproofed paper back, which offers still further protection against the dangers of condensation in winter-air-conditioned homes.

Since Eagle Insulation is made from minerals, virtually nothing can destroy it, and it retains its insulating efficiency "for a housetime." It does not settle or drift, leaving uninsulated spaces, whether installed in batt or granulated form. Neither water nor ordinary fire permanently impair its insulating efficiency. It contains no vegetable matter to attract vermin or insects, and does not rot nor otherwise deteriorate. Full insulating efficiency always.

Showing Method of Batt Installation

COMPARATIVE INSULATING VALUES

Thickness	WALL-THICK	
	WALL-THICK	Eagle Insulation, as applied in walls.
	1/2"	Insulating Wallboard.
	6 1/2"	Frame Wall (3/4-inch drop siding, paper, 1-inch wood sheathing, studs, 1-inch matched boards.)
	8"	Brick Veneer Wall (4-inch brick, wood sheathing, studs, interior finish.)
	8"	Solid Brick Wall (no finish.)
	6"	Stucco Wall (1-inch stucco, wood sheathing, studs, interior finish.)

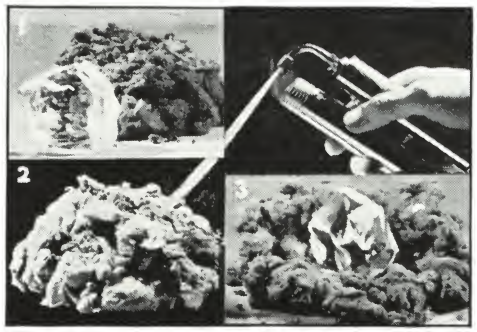
THESE 4 SIMPLE HOME TESTS PROVE THE SUPERIORITY OF EAGLE INSULATION

(1) Boiling Water Test

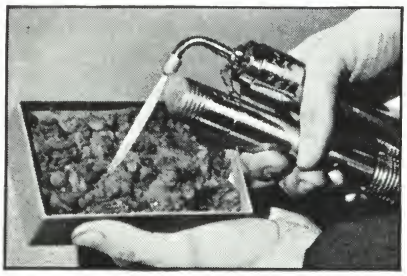
Time how quickly a pan of water heats to boiling on your kitchen range. Then pad an inch or two of Eagle Insulation on the grill over the burner and try to boil another pan of water. If the flame does not reach beyond the edges of the pad, the water will not heat. In fact, the top of the pad will not get warm.

(2) Ice Test

Place a small chunk of ice between two layers of Eagle Insulation. Then play the flame of a blow torch over the wool for a few minutes. Remove the insulation and you will find the ice practically unaffected by the terrific heat of the torch.



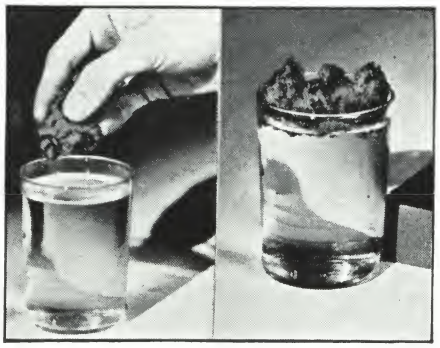
(3) Fire-Retarding Test



Put a 1- or 2-in. layer of Eagle Insulation in a shallow cardboard box. Play the flame of a blow torch on top of the wool as long as you please. The fire does not reach the cardboard bottom of the box—does not even scorch it.

(4) Water Repellence Test

Dip a wad of Eagle Insulation into a glass of water. Note that it sheds water like a duck's back. Take a box of Eagle Insulation and make a slight indentation in the surface of the wool. Pour a few drops of water into this indentation. Notice how the water stays on top—rolls around like beads of mercury on glass.



For free sample of Eagle Insulation, write THE EAGLE-PICHER SALES COMPANY, *Cincinnati, Ohio, or see your local Eagle Insulation Contractor*

EAGLE-PICHER HOME INSULATION SPECIFICATIONS

General Instructions

A protective blanket of Eagle Insulation shall be installed in all specified areas surrounding the living quarters of the home so that the passage of heat in either direction will be reduced to a minimum. The sketches illustrate where insulation should be installed for best results.

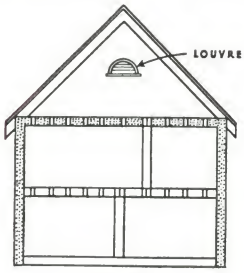


Fig. A

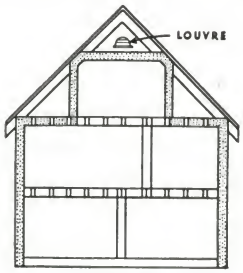


Fig. B

In a house with an unfinished attic, Eagle Insulation may be installed between the top story ceiling joists and in the outside walls as shown in Fig. A.

If there is a heated room in the attic, Eagle Insulation may be installed so as to completely enclose the heated area, including dormers, gable ends, and sidewalls as shown in Fig. B. As an alternate, depending upon the area involved, the attic insulation may be installed between the roof rafters instead of in the knee-walls and flat area beyond. See Fig. C.

Where it is desired to finish the entire attic area, Eagle Insulation may be installed between all roof rafters and in the gable ends as shown in Fig. D.

Open porches, roof-overhangs, attached garages, closets, dormers, gables and other exposed areas shall be insulated as required to provide unbroken insulation protection to the occupied portions of the house.

In regions where winter weather conditions are such that wall or attic condensation may be a problem (i.e., prolonged periods when the outside temperature is below—20° F., combined with high indoor relative humidities) the construction of all exposed areas shall include the use of a suitable vapor barrier in conjunction with insulation. In all cases, the vapor barrier shall be installed against or nearest the warm-in-winter side of the wall, tacking or stapling the barrier securely in position.

Adequate ventilation should be provided for in unfinished attics and in other areas such as those behind knee-walls which are blocked off from the heated portions of the house. Ventilation may be furnished by means of an attic fan or by installing louvres to permit ample cross-ventilation.

Pipes and other equipment containing water which are located in exposed areas should be protected against freezing.

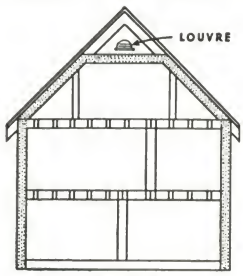


Fig. C

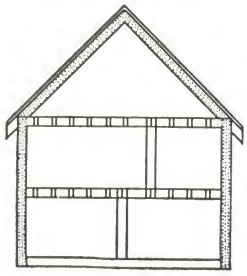


Fig. D

Materials

Insulation shall be Eagle Home Insulation as furnished by the Eagle-Picher Sales Company, Cincinnati, Ohio, or by its authorized outlets. The different types of Eagle Home Insulation are listed below:

Eagle Type H-1 Granulated Wool ..... For pneumatic application.

Eagle Type H-2 Loose Wool.. For hand application in irregular voids.

Eagle Type H-3 Batts..... For quick and easy application to new construction. Available either Ful-Thik or Semi-Thik, sizes 15x23 in. and 15x48 in., with integral vapor barrier on one side. Flanges 1½ in. wide are provided along two edges of the vapor barrier to facilitate tacking in position.

Eagle Type H-4 Junior Batts.. For application where a Ful-Thik batt is desired. Size 12x15 in. without integral vapor barrier.

Eagle Type H-5 Felted Pads.. For application where a Ful-Thik pad is desired. Size 8x15 in. without integral vapor barrier.

Workmanship

(1) Pneumatic Installations—Eagle Type H-1 Granulated Wool shall be installed pneumatically by authorized Eagle Home Insulation Contractors equipped with an Eagle Blowing Machine. Eagle Granulated Wool shall be blown to full specified thickness at uniform density in accordance with Section A of Eagle-Picher's Application Specifications designated below.

(2) Hand Installations—Eagle Loose Wool, Eagle Batts and Eagle Felted Pads shall be installed by hand methods by Authorized Eagle Home Insulation Contractors or by other recognized insulation firms. Eagle Home Insulation shall be applied uniformly to specified thickness in accordance with Section B of Eagle-Picher's Application Specifications designated below.

Work Included

Eagle Home Insulation shall be installed in accordance with Eagle-Picher's Application Specifications to provide a continuous blanket of insulation over the exposed areas specified below.

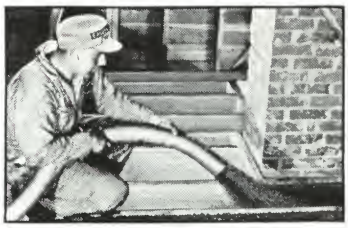
*(**Note:** Delete those areas and applications not applying.)*

1. Unfinished attics:
   (a) Between all ceiling joists.
   (b) Between all rafters.
   (c) Between all studding in gable ends, exposed closets, dormers.
   (d) *State any additions or exceptions.*
2. Finished attics:
   (a) Between all ceiling joists from base of knee-walls to the eaves.
   (b) Between ceiling joists over ..... *(state)* story.
   (c) Between rafters from ..... *(state)* story to ..... *(state)* story.
   (d) Between all studding in gable ends, exposed closets, dormers, knee-walls.
   (e) *State any additions or exceptions.*
3. Exterior walls:
   (a) Between studding in all walls from foundation to roof.
   (b) Between studding in ..... *(state)* walls from ..... *(state)* story to ..... *(state)* story.
   (c) *State any additions or exceptions.*
4. Interior walls:
   (a) Between studding in ..... *(state)* walls from ..... *(state)* floor to ..... *(state)* floor in ..... *(state)* rooms.
   (b) *State any additions or exceptions.*
5. Suspended ceilings:
   (a) Between supporting members over finished ceiling.
   (b) Between supporting members as construction work progresses.
   (c) *State any additions or exceptions.*
6. Miscellaneous areas:
   (a) *(State other work to be included.)*

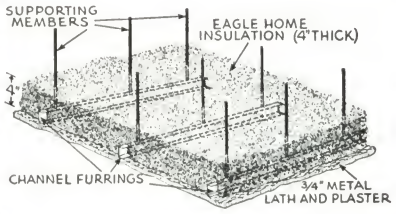
DETAILED APPLICATION SPECIFICATIONS

Section A—Pneumatic Installations

1. **Between Joists in Flat Areas—**
   a. In ceiling joists of exposed areas, Eagle Granulated Wool shall be blown pneumatically over the finished ceiling to a depth of not less than 4 in.



Pneumatic Installation in Flat Attic Area



Suspended Ceiling Application

   b. In suspended ceilings, and in other cases where insulation must be installed before the ceiling finish is applied, a suitable vapor barrier shall be well lapped and tightly secured to the lower face of the joists to temporarily hold the insulation in place. Eagle Granulated Wool shall then be blown pneumatically over the vapor barrier to a depth of not less than 4 in.
   c. In floors over cold spaces, Eagle Granulated Wool shall be blown pneumatically to completely fill the space between floor joists. Before laying the sub-floor, the top face of the joists shall be covered with a suitable vapor barrier, well lapped and secured in place. As an alternate, floor joists over 6 in. deep may be insulated by installing a secondary bottom of *vapor-permeable* building paper between joists to support the insulation. Eagle Granulated Wool shall then be blown pneumatically *over* the *vapor-permeable* building paper to a depth of not less than 4 in. and covered with a suitable vapor barrier before the sub-floor is laid.
2. **Between Studding in Vertical Walls—**
   Eagle Granulated Wool shall be blown pneumatically to completely fill hollow space between studs by means of small wall openings. Before blowing, a plumb-bob shall be lowered into the openings to determine if additional openings are necessary to insure complete coverage.
   a. In new construction, wall openings shall be made from the *inside*, cutting through the scratch coat of plaster near the ceiling. Any wall areas not accessible from the interior shall be serviced from the outside in a similar manner. The insulation work shall be co-ordinated with other construction so that the final coat of plaster (or other finish) will completely eliminate any trace of the openings.
   b. In old homes, wall openings shall be made from the outside, after removing the siding or other exterior finish wherever necessary. After all stud spaces are filled, the exterior finish shall be neatly replaced to leave the appearance in as good condition as found.

Pneumatic Installation in Sidewalls

3. **Between Rafters in Roof Slopes—**
   a. Finished roof rafters shall be insulated with Eagle Granulated Wool, blown pneumatically so that the hollow space between rafters is filled to full rafter thickness.
   b. Unfinished roof rafters shall be covered with a suitable vapor barrier, well lapped and securely held in place with lath or wire, before Eagle Granulated Wool is blown pneumatically to full rafter thickness.
4. **Miscellaneous Areas—**
   a. In insulating certain areas it may be necessary to supplement the blowing operations with hand applications of Eagle Loose Wool, Eagle Batts or Eagle Felted Pads. Refer to Section B of Detailed Application Specifications for recommended installations by "hand" methods.

Section B—Hand Installations*

1. **Between Joists in Flat Areas—**
   a. Eagle Type H-3 Batts (Ful-Thik or Semi-Thik) shall be installed between ceiling joists from above by placing the paper side of the batt down next to the ceiling finish. The batts shall be tucked down snugly between joists and butted closely together.
   b. If it is not possible to install the insulation from above the ceiling joists, Eagle Type H-3 Batts (Ful-Thik or Semi-Thik) shall be placed in position from the underside by pushing them up between the joists and butting them closely together. The batts shall be secured in position by tacking the flanges of the vapor barrier to the bottom face of the joists on not greater than 6-in. centers. If the ceiling joists are *not* to be finished off, the batts shall be permanently supported by lacing small gage wire between nails spaced in the joists on about 12 in. centers. If the insulation is to be covered with lath and plaster or other interior finish, no wire lacing is necessary.
   c. In floors over unheated spaces, such as porches or attached garages, Eagle Type H-3 Batts (Ful-Thik or Semi-Thik) shall be installed between joists with the vapor barrier up. If the joists are over 4 in. deep, a secondary bottom of *vapor-permeable* building paper shall be installed between joists to support the insulation. After the batts are tucked down snugly and butted closely together, the flanges on each edge of the batt shall be lapped over the top face of the joist and tacked on not greater than 6-in. centers before the sub-floor is laid.
2. **Between Studding in Vertical Walls—**
   a. Eagle Type H-3 Batts (Ful-Thik or Semi-Thik) shall be installed between studding with the vapor barrier next to the warm-in-winter side of the wall. Starting at the bottom of the stud space, the batts shall be butted closely together, cutting them if necessary to fit irregular panels. Always provide sufficient flange along the edge of batts that are cut so that they may be well lapped before tacking in position. Where pipes or electrical outlets protrude, cut the vapor barrier to fit snugly around them. The batts shall be retained in position by tacking the flanges over the inside face of the studs on not greater than 6-in. centers. On unfinished walls the batts shall then be permanently supported by lacing small gage wire between nails spaced in the studs on about 12-in. centers. If the insulation is to be covered with lath and plaster or other interior finish, however, no wire lacing is necessary.
3. **Between Rafters in Roof Slopes—**
   a. Eagle Type H-3 Batts (Ful-Thik or Semi-Thik) shall be installed between rafters with the vapor barrier placed next to the warm-in-winter side. Starting at the bottom of the rafters, the batts shall be butted closely together, cutting them if necessary to fit irregularities in construction. The batts shall be retained in position by tacking the flanges over the face of the rafters on not greater than 6-in. centers. In unfinished attics, the batts shall then be permanently supported by lacing small gage wire between nails spaced in the rafters on about 12-in. centers. If the insulation is to be covered with lath and plaster or other interior finish, however, no wire lacing is necessary.

Stapling Batt Insulation between Rafters

4. **Miscellaneous Areas—**
   a. Any areas in addition to those herein considered shall be insulated with Eagle Insulation of specified thickness in accordance with the methods and principles outlined in the General Instructions and the Detailed Specifications.

**While the specifications as written in Section B deal primarily with Eagle Type H-3 Batts, any of the Eagle Insulation materials previously described may be substituted providing a suitable vapor barrier is used where necessary in conjunction with the insulation. In all cases, the vapor barrier shall be installed against or nearest the warm-in-winter side of the wall.*

THE FLINTKOTE COMPANY

50 West 50th Street, NEW YORK, N. Y.

BRANCH OFFICES

ATLANTA, GA., 1215 Sylvan Road, S. W.
BOSTON, MASS., 826 Park Square Bldg.
CHICAGO, ILL., 624 So. Michigan Ave.
DETROIT, MICH., 14201 Schaefer Highway
NEW ORLEANS, LA., Poland and Galvez Sts.
WACO, TEX., 402 Superior Life Bldg.

For Flintkote Asphalt and Asbestos Shingles and Sidings, Roll and Built-up Roofings, Insulation Board Products, HardBoard and Asphalt Emulsions, see File Index

FLINTKOTE ROCK WOOL INSULATION

Characteristics—Rock Wool is manufactured by a process of blowing molten rock into a fibrous mass with steam under pressure. It is white in color and similar in appearance to fluffy cotton. Rock wool is entirely non-combustible and is approved by the City of New York for fire retarding stair-hall partitions. The thermal conductivity of rock wool insulation for calculating purposes as listed in the "Guide" of the A. S. H. V. E., is .27 B.t.u. per hour, per square foot, per inch thickness, per degree Fahrenheit difference in temperature.

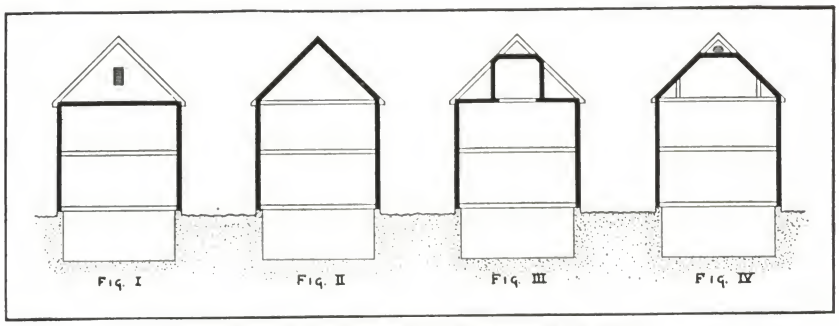
Types—Four types of wool are manufactured for various purposes: (1) Long Fibre for hand packing; (2) Granulated (nodulated) for pneumatic installation; (3) Bats (with and without paper backing), preformed rectangular shapes for convenient installation between studs, and (4) Strip Form (in rolls). Rock Wool is non-corrosive and will not support any form of life, such as rodents, vermin, termites, etc. The acoustical properties of Rock Wool are excellent. Wool Bats and Long Fibre Wool are self-supporting in vertical walls.

General Installation Information

Successful performance of Rock Wool insulation in a house depends primarily upon its location. At right are drawings of a typical house showing Flintkote Rock Wool insulation installed to best advantage. All enclosed air spaces which are uninsulated should be ventilated by louvers. Water lines which are located in uninsulated portions of the building should be protected from freezing. The same principles of sealing upper floors, as shown, also apply to apartment house installations and other types of buildings.

Where attic is unheated, insulation should be installed in all outside walls between studding and between open joists in the floor of the attic as in Fig. I. Ventilation through louvers should be provided. This method is the most commonly used and is the most economical.

When top floor is heated, insulation should be installed as shown in Figs. II, III, or IV. In all such installations, the gable ends should also be insulated. When attic rooms are small, installations as shown in Fig. III are desirable. Fig. IV illustrates method recommended when attic rooms are large, space under eaves is used for storage purposes, or climatic conditions are severe. The space above attic ceiling should be ventilated, if possible.



Methods of Insulating with Flintkote Rock Wool

Long Fibre Wool should be packed by hand to a density of 2 to 2½ lbs. per sq. ft. wall thick (3⅝ in.). When packed by competent workmen, it is entirely self-supporting in vertical areas.

Bats are easily installed by hand and are made to fit standard stud spacing. They can easily be cut to fit any odd shaped spaces that may occur under windows or braces. Furred wall areas should be backed up or faced with paper or wall board. Bats may be held in place between roof rafters by the use of wire netting, wall board or wood lath.

Granulated Wool in existing houses should be installed by a Flintkote Certified Home Insulator.

Strip Wool is easily installed by unrolling the wool between the studs or joists.

PRODUCT DATA—FLINTKOTE ROCK WOOL INSULATION*

Product	Use	Size	Package	Net Contents	Approximate Coverage
Dura Wall Thick Bats (Waterproof wool with waterproof paper backing provided)	New Houses: Walls, Ceilings Roof slopes Existing Houses: Unfinished attics	15 x 48 in. 15 x 23 in.	4 Bats per carton 8 Bats per carton	20 sq. ft. 19.2 sq. ft.	21 sq. ft. 20½ sq. ft.
Dura 2-in. Thick Bats (Waterproof wool in half thickness where lowest cost is necessary)	New Houses: Walls, Ceilings Existing Houses: Unfinished attics	15 x 23 x 2 in.	12 Bats per carton	28.8 sq. ft.	30½ sq. ft.
Prepac Wool—3 In. Thick (Waterproof wool semi-bats)	New Houses: Walls, Ceilings Existing Houses: Unfinished attics	12 x 15 in.	16 pieces per carton	20 sq. ft.	21 sq. ft.
Strip Wool (A convenient form for easy installation)	New Houses: Walls, Ceilings Existing Houses: Unfinished attics	15 x 54 x 2 in.	2 pieces per roll 2 Rolls per bag	22½ sq. ft.	24 sq. ft.
Long Fibre Wool (Loose wool for hand packing)	New Houses: Walls, Ceilings Existing Houses: Open ceilings	Bulk	Kraft double liner paper bags	*Weight* 35-lb. bags	17 sq. ft.
Granulated Wool (Primarily for pneumatic installation)	New Houses: Ceilings Existing Houses: Walls, Ceilings Roof slopes	Bulk	Kraft double liner paper bags	30-lb. bags	16 sq. ft.

*Subject to change without notice.

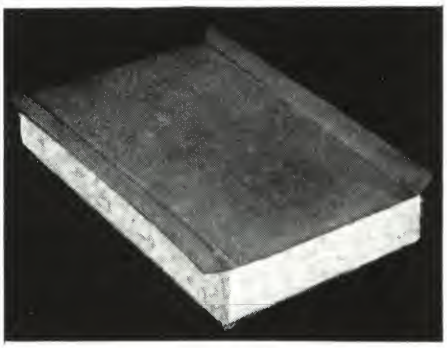
GENERAL INSULATING & MFG. CO.

Manufacturers of House Insulation and a Complete Line of Pipe Coverings and Industrial Insulating Materials

EXECUTIVE OFFICES
705 Olive St., ST. LOUIS, MO.

ENGINEERING OFFICES AND MAIN PLANT
ALEXANDRIA, IND.

BRANCH OFFICES: DOVER, N. J., DUBUQUE, IOWA
REPRESENTATIVES IN ALL PRINCIPAL CITIES



"Wall-thick" Sealal Bats are backed with heavy vaporproofed paper to provide extra protection against heat, cold, and moisture.

Low Application Cost

Gimco Sealal Bats are much easier and quicker to install than ordinary bats. They need only to be pushed between studdings or joists. Their own natural resiliency holds them permanently in place without additional support. Gimco No. 200 Rollbats are ideal where the ease of application and rigidity of the Sealal Bat is not required.

Gimco — SEALAL ROCK WOOL BATS MADE BY SPECIAL ANNEALING PROCESS

It is a well-known fact that next to a vacuum, dead air, which cannot circulate, provides the best insulation known to science. That is why Gimco engineers developed the patented Gimco annealing process. It gives Gimco Rock Wool unusually long, tough fibres and a volume which consists of more than 90% tiny "dead air" cells!

"Wall-thick" Insulation Provides Maximum Efficiency

Gimco Rock Wool provides the greater protection which only a "wall-thick" insulation can give . . . its efficiency (conductivity .067 b.t.u.'s installed 3⅝ in. thick) is, we believe, unsurpassed by any other building insulation. Gimco keeps a home up to 15° cooler in summer, and in winter, makes it easier to maintain a uniform warmth throughout the house. In addition, Gimco keeps *more* furnace heat inside and enables homeowners to make a substantial saving on their winter fuel bills!

Gimco Sealal Bats completely fill empty spaces between studdings and joists. They can easily be cut to fit any irregular spaces.

Gimco Rock Wool Is Fireproof—Permanent

Gimco is as fireproof as the rock itself. It provides an effective barrier against spreading fires. Then too, it resists moisture and will not decay, pack down or dust out. It is as permanent as the house itself. Being inorganic, it offers no attraction to vermin or termites.

Gimco Rollbats are easily installed and provide maximum efficiency for this type of insulation.

Shipping Data Specifications

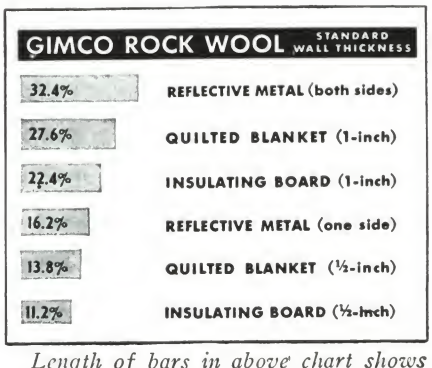
Gimco Sealal Bats are available in three sizes either with or without waterproofed paper backing. (1) 15 in. x 18 in. x wall thick; (2) 15 in. x 23 in. x wall thick; (3) 15 in. x 48 in. x wall thick. Average density: 4¾ lbs. per cu. ft. Shipped in cartons, 10 bats to a carton. 10 small bats insulate approximately 20 sq. ft. of wall or ceiling area; 10 medium size bats insulate approximately 25½ sq. ft.; 10 large bats insulate approximately 55 sq. ft.

Packed in neat individual cartons, Gimco No. 200 Rollbats are 9 ft. long, 15 in. wide, and can be fluffed to approximate wall thickness. Heavy waterproofed paper is fastened to one side of the strip, and a flange of the paper extends out 1½ in. along both sides.

Sealal Bats are placed over top floor ceilings between the joists. Being extremely light, they cause no strain whatsoever on ceiling plaster.

Gimco Is Easily Blown Into Existing Homes

For modernization of present homes, Gimco Rock Wool in granulated form can easily be installed in empty wall and ceiling spaces. Openings are made in the walls, and the wool is blown in under pneumatic pressure. (See cut at left.) There is no dirt or disturbance of any kind. Trained workmen complete each job quickly. Afterwards, the openings are sealed up leaving no traces of the work that was done. Insulation is applied to the attic by blowing the wool to a depth of 4 in. between the joists.



Length of bars in above chart shows resistance to passage of heat offered by other materials in comparison with Gimco.

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Products

JOHNS-MANVILLE ROCK WOOL HOME INSULATION.

For the following Johns-Manville products see File Index: Acoustical and Sound Isolation Materials; Asbestos and Asphalt Shingles; Built-up and Insulated Roofs; Insulating Board and Insulating Lath; Pipe Coverings and Insulations; Asphalt Tile Flooring; Corrugated and Flat Transite Sheets; Asbestos Wainscoting and Flexboard; Steeltex for plaster, stucco, and brick or stone veneer; Steeltex Floor Lath; Transite Walls for office partitions; Welded Wire Reinforcement; Flush Doors.

J-M ROCK WOOL HOME INSULATION

Johns-Manville Rock Wool Home Insulation is a light, fluffy material, actually blown from molten rock into a wool-like substance, of high efficiency for heat-proofing practically any building, old or new. It is furnished in two forms, for two specific purposes. For new buildings, where it can be placed in the walls and over the ceiling during the course of construction, it is fabricated into easily handled batts. For insulating existing houses and apartments, office buildings, hospitals, etc., it must be pneumatically installed by a blowing process and is therefore furnished in a nodulated form.

Because Rock Wool is a natural low conductor of heat, and because it prevents undesirable air circulation in the hollow spaces inside the walls, it retards heat transmission in all three ways (radiation, convection and conduction). It is a durable, rot-proof, fireproof and odorless material that will not corrode or settle.

A full wall thickness of this material is as effective as a solid stone wall 11 ft. thick in its ability to resist heat and cold. As a result when used as a home insulation, completely surrounding the occupied areas of the house, it cuts fuel costs up to 30% by keeping heat in, reduces drafts and makes upstairs' rooms easier to heat, warmer and cozier. In hottest summer weather it helps keep rooms up to 15° cooler than before insulation by retarding the penetration of unwanted heat.

J-M Type B Batts in New Construction
Installed in all exterior walls as well as across the roof or top floor ceiling

J-M Type B Rock Wool Batts in New Homes
Efficient, fireproof, economical

Johns-Manville Engineers have had a wealth of experience with this material and its application. More than 250,000 homes have been insulated with Johns-Manville Rock Wool—a background of experience in insulating both new and existing homes that is at your service in the solution of your home insulation problems.

FOR NEW CONSTRUCTION
Types B, C and Junior Batts

Type B Home Insulation is furnished in the form of a pre-fabricated batt of uniform density, both full stud thickness and semi-thick, in sizes 15 x 23 in. and 15 x 48 in. (designed to fill completely the width between studs, joists or rafters spaced on the usual 16-in. centers).

To one face of the batt is attached a waterproof, vapor-resistant paper, with a folded flange along each of the two long sides of the batt. This not only protects against the penetration of moisture from wet plaster, but also serves to resist the infiltration of moisture vapor from the house into the wall. The 1½-in. flange on each side of the batt should be folded over the stud and tacked down for protection against moisture vapor. At the same time, the flange forms a convenient method of holding the batt in place temporarily, with the fewest possible number of joints between batts.

Junior Batts are similar to regular Type B Batts, except that they have no paper backing and are furnished only in size 12 x 15 in. by full wall thickness.

Type C Home Insulation is an improved form of loose wool, in pieces 8 x 15 in. which readily fluff to full wall thickness when installed. This material, likewise, is furnished without paper backing.

Both Junior Batts and Type C can be readily pressed between studs, ceiling beams or roof rafters, and easily cut or torn with the hands to fit around windows, doorways, pipes, plumbing stacks, etc.

The uniform, factory-made density of Type B and Junior Batts assures the home owner a full measure of protection and summer and winter comfort, and, when properly installed, leaves no undesirable, heat-leaking voids or thin spots.

Junior Batts in New Construction
Top floor ceilings are rapidly insulated

FOR EXISTING HOMES AND BUILDINGS

Type A "Blown" Rock Wool

The problem of insulating existing buildings is naturally more intricate, due to the lack of access to the hollow spaces in walls and roof, and requires a painstaking and scientific technique.

Type A Rock Wool is furnished in nodular form so that it can be readily blown through a hose under pneumatic pressure. Johns-Manville Engineers developed a simple, effective machine to accomplish this blowing operation. In the hands of J-M Approved Home Insulation Contractors, this method assures a full measure of value since the Rock Wool, when blown into the walls and attic spaces, completely fills every nook and cranny with heat-resisting material. Type A Rock Wool is thus blown by compressed air into all spaces between studs in outer walls, between beams or rafters in attic floors and elsewhere as required to surround completely the occupied area of the house. Practically any type of house can be insulated the J-M way—brick veneer, shingle, clapboard or stucco—and most of the work is done from the outside, without disturbing the interior of the house.

Walls of existing structures are insulated in this manner
Even brick and stucco offer no problem

The "blowing" is done only at low pressures (usually 2 lbs. per sq. in. or less). The pressure accomplishes two desired effects. It results in a dense, even pack (approximately 5 to 8 lbs. per cu. ft.) which assures maximum thermal efficiency; and it puts the material under an initial compression so that any subsequent vibration or building movement will not cause the insulation to sag, but rather, to expand and thus retain its full insulating value.

In the A.S.H. & V.E. Guide, the conductivity for Rock Wool is given as 0.27 B.t.u. at a mean temperature of 90° F. and 10-lb. density At the "blown" density, this figure is conservative, since, within certain limits, conductivity is slightly reduced by lighter density.

"Blowing" entrusted only to Approved Contractors

Proper installation is as important as proper insulation, particularly when the wool is to be "blown" into an existing building. Johns-Manville entrusts this responsibility only to Approved Home Insulation Contractors and the requirements of the franchise are rigid from the standpoint of quality workmanship and procedure.

Johns-Manville Home Insulation for both new and existing homes and structures is available through a nation-wide network of building materials dealers and Approved J-M Home Insulation Contractors located throughout the United States and Canada.

J-M Home Insulation Crew "Blowing" an Occupied Frame House
Johns-Manville developed the blowing machine which first made it possible to insulate existing buildings with Rock Wool, and has insulated over 250,000 American homes by this method

WHERE TO INSTALL J-M ROCK WOOL HOME INSULATION

The purpose of insulation is to keep heat in or out of the living portion of the house. If the attic is unfinished and not used for living quarters, it is obviously better to stop the heat flow at the attic floor line instead of at the roof. The following sketches indicate where insulation should be installed for best results.

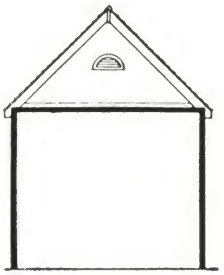


Fig. A

In a house with an unfinished attic, J-M Home Insulation may be installed in outside walls and between the top story ceiling joists, as shown in Figure A.

Where the presence of an attic floor makes the above procedure impractical, the insulation should be installed between the roof rafters, as indicated in Figure B, and between the studding in the gable ends.

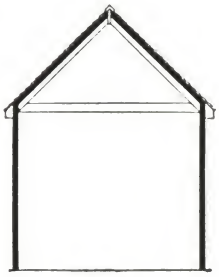


Fig. B

An attic which contains a heated room should be insulated by installing the Rock Wool between the rafters and ceiling joists, as shown in Figure C.

Where the batts are to be installed in the furred spaces behind masonry construction (which spaces must be not less than 2 in. deep), the inner face of such masonry should be waterproofed before the application of the insulation.

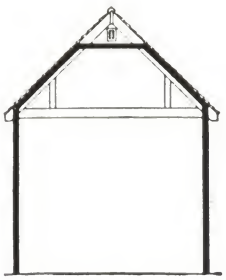


Fig. C

If a garage is attached to, or is under, the house, the Rock Wool should be installed in all walls between the garage and house, or in the ceiling of the garage.

If there are heated portions of the house projecting beyond the main walls, as, for example, over an open porch, etc., the insulation should be installed between the floor joists under all heated portions of the house which are exposed on the underside.

Attics and all similar spaces which are outside the insulated portions of the house (for example, where the insulation is installed between the ceiling beams under the attic floor) should be adequately ventilated, where modern tight roof construction is employed, by being connected with the outside air through louvers or similar means. Such louvers should be provided at opposite ends of such spaces so there will be cross ventilation. Protection against freezing should be provided on pipes and other equipment containing water which are located in these spaces.

SPECIFICATIONS FOR TYPE A HOME INSULATION (INSTALLED MECHANICALLY)

Work Included

The work contemplated under this specification shall include all materials, labor, equipment and services necessary for, and reasonably incidental to, the installation of Johns-Manville Home Insulation to insulate completely the portions of the building as shown and noted on the drawings or herein specified.

This contractor shall make all openings required to install his work and shall do all patching of such openings after his materials have been placed. He shall furnish and set all work not included by other contractors which may be required in connection with the installation of his materials.

(Insert here detailed specifications applying to the particular job.)

Work Not Included

The following work will be furnished and installed as specified under other divisions of the specification, which this contractor shall read to ascertain what is called for therein:

All metal or wood lath, insulating lath or plaster lath shall be furnished and installed as specified, on all walls which are to be insulated and finished with plaster. If metal or wood lath, such lath adjoining ceiling, window sills, etc., on all walls to be insulated shall be only temporarily secured so that the Home Insulation Contractor may readily install the material. Subsequent replacement of lath shall be by others.

Materials and Workmanship

All insulating materials placed under this specification and contract shall be those manufactured by Johns-Manville Corporation and shall bear the manufacturer's label. In confined areas, the insulation material shall be installed by the pneumatic method. In areas which are readily accessible for hand application, the insulation may be installed by that method, using Type B or Junior Batts or Type C Home Insulation. All insulating material shall be installed by the *(state name and address of the Home Insulation Company).*

METHOD OF INSTALLING TYPE B HOME INSULATION

General Instructions

Johns-Manville Type B Home Insulation is Rock Wool in convenient batt form for easy installation between open studding, rafters, or joists. (For closed, inaccessible spaces, Type A Home Insulation, applied pneumatically, is recommended.) The batt has a sheet of waterproof paper on one face extending 1½ in. on the long sides (see FigureD).

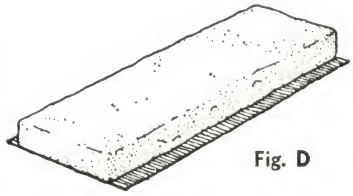


Fig. D

Care should be taken to leave no heat-leaking voids or crevices. Butt the batts, snugly together. Odd-shaped areas are insulated by cutting or tearing a part of

the Rock Wool from the full batt. Care must be taken to leave paper on the remainder of the batt to provide for the lap.

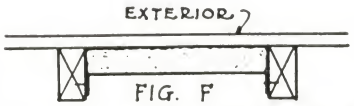
On jobs where plaster is to be applied after the installation of the batts, it is important that adequate ventilation be provided in the interior of the building to facilitate drying.

Directions for Unpacking—Place the carton on the floor with the side marked "top" facing up. Slit the carton and, with flaps opened, turn carton over, gently emptying contents. Slide fingers under the sides and near the far end of the batt, with thumbs on top of paper backing. Grasp firmly both the rock wool and paper backing, lift from pile and set in place.

Installation

Between Studs—In insulating exterior walls, the batts should be installed between the studs from the top of the foundation to the roof, placed with the unpapered side against the sheathing. Where Ful-Thik Batts are used in 4-in. studding, the paper flaps should be tacked to the face of the studs (see Fig. E).

FIG E
FUL-THIK BATTS BETWEEN 4" STUDS



SEMI-THIK BATTS BETWEEN 4" STUDS OR FUL-THIK BATTS BETWEEN STUDS EXCEEDING 4" IN DEPTH

Where studding is more than 4 in., or where Semi-Thik Batts are used between 4-in. studs, the paper flaps should be turned out on the sides of the studs and tacked in place (see Fig. F).

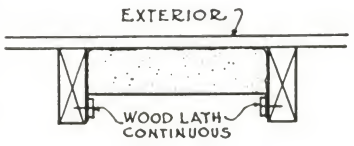
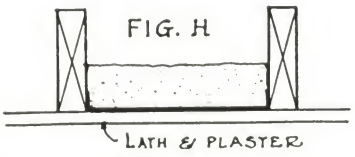


FIG. G
FUL-THIK BATTS BETWEEN RAFTERS EXCEEDING 4" IN DEPTH

Between Ceiling Joists—The batts should be laid with paper side down between ceiling joists on top of lath or plaster-base (see Fig. H). If lathing is not in place, or if it is impossible to get above ceiling joists, the batts can be placed from the underside with the paper flaps turned out on the underside of the joists and tacked in place. (See Fig. E.)



FUL-THIK BATTS BETWEEN CEILING JOISTS

The junction between the ceiling and exterior walls should be thoroughly insulated by carrying the ceiling batts to the inside face of the outside sheathing.

Between Roof Rafters—The batts should be installed between the rafters, with the unpapered side against the sheathing or shingle lath, etc. The paper flaps should be turned out on the sides of the rafters and continuous wood strips applied over the flaps and secured as shown in Fig. G.

(If rafters are 4 in., the Ful-Thik Batts are installed as shown in Fig. E, except that the wood strips are applied over the paper flaps.)

Fastening—A convenient method of securing the paper is to use a "Bostitch H-2 Hammer", which feeds staples automatically. If this is not available, ordinary carpet tacks may be used for fastening.

Maximum spacing of fasteners should be 6 in. center to center. On face of studs, joists or rafters which are to receive lath, etc., only sufficient fasteners to hold the paper temporarily in place need be used.

METHOD OF INSTALLING JUNIOR BATTS AND TYPE C HOME INSULATION

General Instructions

Johns-Manville Junior Batts are Rock Wool batts similar to Type B, except that they have no paper backing and are furnished 12x15 in. by full wall thickness. Junior Batts are shipped 16 batts per carton, providing 20 sq. ft. net area. Type C Home insulation is furnished in individual pieces 8x15 in. in size, without paper backing, and is shipped in bags containing 18 pieces with a net surface area of 15 sq. ft. Both Junior Batts and Type C are packed with paper separators between each layer to facilitate handling.

Directions for Unpacking—*Junior Batts*—Place the carton on the floor with the side marked "top" turned up. Slit the carton, open the flaps and turn the carton over, gently emptying the entire contents at once. The paper separators will cause sufficient slip to enable a single batt to be readily lifted.

Type C Pieces—Slit the top of the bag and empty gently, drawing the bag slightly to one side at the same time. As the pieces slide out, they will separate and be easy to handle. Before applying, each end of the piece should be grasped and the piece given a slight shake, which will fluff it up to the full thickness of the studding.

Installation

General—Batts or pieces must be butted snugly together to avoid leaving heat-leaking crevices or voids. Odd-shaped spaces are filled by breaking the batts or pieces to proper size. When Type C pieces are applied where the stud or rafter spacing is 24 in. on centers, one piece should be placed horizontally and one vertically, which will fill the space properly.

Vapor-sealing—A membrane of J-M Vaporseal Paper should be installed over the insulation, applied directly to inside faces of framing members (studs, joists or rafters), this paper to be placed between the insulation and heated or occupied portions of the building. The vaporseal paper (furnished 36 in. wide) should be run parallel to the framing members, in continuous lengths from plate to sill, etc., with all joints made to occur over framing members. Adjacent lengths should be lapped not less than 2 in. and should be secured with large-head tacks, spaced on not greater than 12-in. centers. This vaporseal paper should not be stretched tightly between the framing members but should be fastened slackly so as not to interfere with the keying of the plaster.

Insulation Support—If joist spaces are inaccessible from above, or if no interior finish treatment is planned, nails should be driven into the framing members (joists or rafters) staggered on 8-in. centers, and a soft-annealed, galvanized iron wire laced between the nails to support the batts or pieces as they are put in place. The vaporseal paper membrane should then be installed.

Exterior Protection—Building paper that is waterproof, but not vapor-proof, should be used over exterior sheathing.

Installation at Floors—In unfinished attic floors, the vapor-proof membrane should be applied to the underside of the joists and plaster base, and plaster then applied. When the plaster has set, the insulation (Junior Batts or Type C pieces) should be installed between joists from above.

Installation between Roof Rafters of Dormers or Bay Windows—As the vaporseal membrane is installed towards the ridge of the main roof, batts or pieces should be filled in between the rafters at these points. Plaster base and plaster, or other interior finish, should then be installed.

KIMBERLY-CLARK CORPORATION

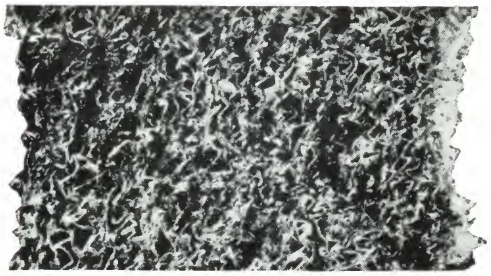
ESTABLISHED 1872

Manufacturers of Expanding Blanket Insulation

NEENAH, WIS.

SALES OFFICES

NEW YORK, N. Y., 122 E. 42nd Street — CHICAGO, ILL., 8 So. Michigan Avenue



This cross section of a Kimsul blanket, approximately twice natural size, shows the creped layers of fiber and the millions of still air cells which form a highly effective thermal insulant

KIMSUL is a wood fiber product manufactured by the KIMBERLY-CLARK CORPORATION, who have been making paper and other products from wood fibers since 1872.

KIMSUL
REG U S & CAN PAT OFF
Expanding Blanket
INSULATION

KIMSUL provides insulation of the blanket type, being composed of many thin layers, so formed as to include a maximum number of dead air cells. The materials used and their treatment in manufacture make the product highly resistant to fire and water and obnoxious to rodents and vermin. KIMSUL has no odor, either when new or after installation.

UNIQUE PROPERTY OF EXPANSION

Besides providing an insulating material of high thermal efficiency and the other properties demanded by architects and builders, KIMSUL'S unique "expandability" makes it particularly desirable because the costs of handling and installation are reduced by its greater convenience.

Like all insulating materials, KIMSUL stops the passage of heat by interposing a barrier constituted largely of air. When installed, KIMSUL weighs only 131.5 lbs. per 1,000 sq. ft. The shipping, trucking, handling and installation of KIMSUL is made simple, easy and inexpensive because at the time of manufacturing it is compressed to about 20% of its installed volume.

A carton only 19½x15½x23½ in. in size contains enough KIMSUL to cover 250 sq. ft. of area with a blanket 1 in. thick—the equivalent of 20¾ cu. ft. of material, which is shipped and handled in a carton containing slightly more than 4 cu. ft. Thus sufficient KIMSUL to insulate an entire house can easily be carried in one truck load, and one man can easily carry the bulk and weight of KIMSUL required to insulate an average room 14x20 ft. in size.

With KIMSUL there is no waste of material. A regular size blanket fills a standard wall opening 15 in. wide (studs on 16-in. centers) and its expansion and flexibility permit filling any opening from 8 ft. 4 in. to nearly 10 ft. high. The odd pieces of KIMSUL resulting from the insulation of non-standard spaces are used for caulking the space around door and window openings so that all of the material is utilized.

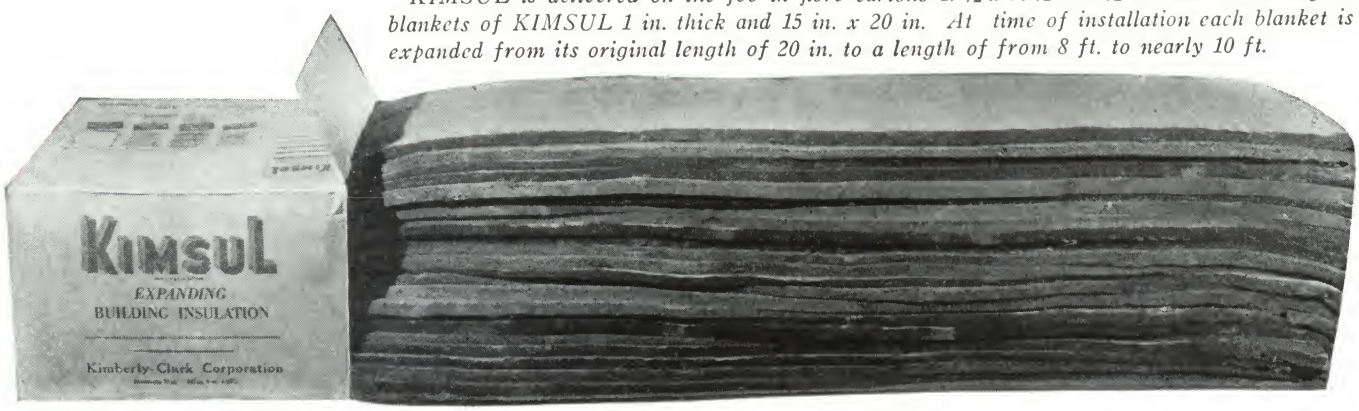
Physical Properties

In addition to these obvious advantages which produce handling and installation economy, KIMSUL more than meets the challenge of competitive products on the following points:

Thermal Conductivity—KIMSUL'S conductivity (or K factor) is .27 B.t.u./hr./sq. ft./in./° F., according to J. C. Peebles of Armour Institute of Technology. Properly installed, its total effectiveness is even greater, for in addition to the millions of still air cells permanently formed in the blanket itself, air spaces are created on both sides of it. (See "Unique Physical Feature".)

Lightness—At ordinary thickness, KIMSUL has an installed density of 1.58 lbs. per cu. ft. Installed, 1000 sq. ft. of it weigh only 131.5 lbs. Thus KIMSUL adds relatively little weight to the structural load of a building.

KIMSUL is delivered on the job in fibre cartons 19½ x 15½ x 23½ in. and containing 24 blankets of KIMSUL 1 in. thick and 15 in. x 20 in. At time of installation each blanket is expanded from its original length of 20 in. to a length of from 8 ft. to nearly 10 ft.



KIMSUL EXPANDING BUILDING INSULATION

Permanence—KIMSUL is heat, air, and moisture resistant. Non-toxic chemicals protect it against fire. The materials used in its manufacture are highly resistant to attacks by vermin, insects, and fungi. Treated with asphalt, and tightly felted, the fibres are joined to each other in such a way that they will not separate, sift, or disintegrate under normal conditions.

Clean and Odorless—KIMSUL is not a by-product. It creates no dust or dirt at time of installation and will not develop an odor. It leaves no irritating after-effects on men handling it.

One Inch Thickness—Many tests have proved that with its unusually high insulating efficiency, a 1-in. blanket of KIMSUL provides the maximum of insulation value at the lowest possible cost. Hence KIMSUL blankets are made to provide a thickness of 1-in. when installed.

How To Install Kimsul

No special skill or tools or experience are required to handle or install KIMSUL. It is shipped in fiber cartons with over-all dimensions of 19½x15½x23½ in., weighing about 40 lbs. gross, about 33 lbs. net. Because of KIMSUL's unique creping process, each of these cartons holds 250 sq. ft. of insulation consisting of 24 blankets 15 in. wide and 8 ft. 4 in. long when expanded to normal length.

The convenience of this method of packaging is one of the features which explains why architects and contractors so readily accept KIMSUL insulation. KIMSUL occupies less storage space than any other kind of insulation. 20 cartons or 5000 sq. ft. can be stored in 32x40 in. of floor space when the cartons are stored 10 ft. high. There is no loss of material or fire hazard during storage.

To Insulate Vertical Walls

Expand the ends of the compressed blanket, then push it between the studs with the top end against the header. (See Figure 1.) It is not important to center the KIMSUL blanket on the header because of its automatic centering action. (See "Unique Physical Feature".)

When the blanket is in place, fasten it at the top by placing a lath, cut to the correct length, against it and driving two nails through the lath and the KIMSUL blanket into the header. Then grasp the free end of the blanket gently and draw it downwards to the desired length. (See Figure 2.) In the beginning it may prove helpful to do this by holding the free end between two wood strips and drawing on them, but with a little experience that becomes unnecessary. After a blanket is expanded to the full length of the section, attach it to the sill plate with a lath in the same manner that it was attached to the header.

Finally fasten the blanket along the sides near the studs by driving sheathing nails, at intervals of 15 to 18 in. through the edges of the insulation into the sheathing (Figure 3). Drive the nails in only a short distance so as to avoid compressing the material.

When the spaces to be filled are of less than standard width, cut the blanket to the odd widths required before expanding it. This is done most easily with a hatchet, but shears or any reasonably sharp implement will serve the purpose.

Unique Physical Feature

So that KIMSUL will center itself in the space where it hangs, regardless of how it is installed, the product has been designed to expand slightly after vertical installation. This produces small bulges or loops at the blanket nails, sufficient to push the KIMSUL away from sheathing or plaster and create an air space on either side. This increases the thermal resistance of the wall, and moreover assures ventilation of the inner sheathing surface to inhibit water and mold formation.

← Figure 1

Neither special tools nor special skill are required to install KIMSUL insulation. By reason of the fact that KIMSUL blankets fit standard wall openings (studs on 16-in. centers) and can be expanded to any required length between 8 and 10 ft., work progresses much more rapidly with KIMSUL than with materials which have to be measured and cut. Moreover, waste is eliminated and as a result the actual cost of insulation markedly reduced.

Figure 2 →

KIMSUL EXPANDING BUILDING INSULATION

In filling spaces of less than standard length, cut strips to required dimensions from blankets that have been fully expanded.

Insulation of Sloping Roofs

KIMSUL is provided in 17, 20 and 24 in. widths, as well as the standard 15 in. All packed 250 sq. ft. per shipping carton—and all at the same price. For installation in sloping roofs, purchase KIMSUL of proper width and fasten along sides of blanket to rafters with batten strips.

Insulating Ceilings or Floors

Figure 4 shows how KIMSUL is laid between the floor joists on a flat ceiling. The blankets are placed directly on the plaster base and expanded as they are installed. A 2-in. overlap is recommended on blanket ends. When it is necessary to use two or more lengths of KIMSUL, the splices should be made by nailing the two ends between two pieces of lath, as shown in the illustration. In addition to insulating the ceiling, all openings at the tops of studs should be plugged with pieces of KIMSUL.

Odd Corners and Spaces

Insulating odd corners and spaces with KIMSUL is simple; for no special skill or tools are needed to cut or tear it to the required shapes. However, in installation the same practices should be followed that have been described in the previous instructions. Always attach the tops and bottoms of the pieces with lath. If the height of the opening exceeds 15 in., drive supporting nails into each side of the material, except when the installation is to be made at an angle. Then both sides should be attached with laths, in accordance with the instructions given for sloping roofs.

Caulking

Caulking around openings in cold walls is vital to any good job of insulation, since no amount of weather stripping can stop infiltration between casements and walls. KIMSUL is the ideal caulking material. Small pieces of it can be tamped quickly and firmly into all cracks and crevices (as shown in Figure 6), with the assurance that the flexible fibers which compose it will pack so tightly that they will eliminate heat leakage no matter how small the opening.

No Waste

Odd shaped KIMSUL pieces produced when non-standard wall areas are insulated are ideal for caulking. Thus KIMSUL can be used completely and no waste results.

For Thick Insulation

Where more than 1 in. of material is desired—use two blankets of KIMSUL as illustrated in Figure 5. The end attachment demonstrated in the illustration is recommended only for vertical walls. For sloping roofs or spaces use the method shown in Figure 4.

Table of Recommended Widths

Use this table when figuring proper widths of KIMSUL for walls, deckings and sloping roofs:

Stud, Joist & Rafter Spacing (on centers)	Recommended KIMSUL Width	
	Walls, Ceilings and Floors	Sloping Roofs
16″	15″	17″
20″	20″	24″
24″	24″	24″

Suggested Specifications

All exterior walls and the roof shall be insulated with 1-in. KIMSUL, as manufactured by KIMBERLY-CLARK CORPORATION, Neenah, Wis.

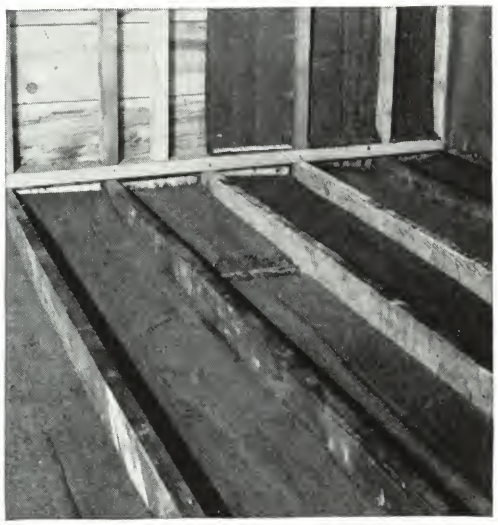
Note: Occasionally one or more interior walls are insulated also, particularly those of the bathroom. Sometimes the first floor ceiling is insulated so that downstairs living quarters will remain warm, though upstairs bedrooms are cold at night. In such cases, suitable additions to "Work Included" should be made in specifications.

All exterior walls and top floor ceilings shall be vapor-sealed to prevent condensation of moisture, with a paper containing a continuous film of asphalt.

←Figure 3

Nothing is needed to hold KIMSUL in place after it has been fastened top and bottom but a few nails driven through the blanket to anchor it to the sheathing.

KIMSUL EXPANDING BUILDING INSULATION



←Figure 4

Because KIMSUL is so light that it adds no appreciable structural load it is possible to insulate floors with it by placing the blankets directly on plaster base and expanding them as they are installed. Fig. 1.

Here is shown proper method for installing a second layer of KIMSUL where possible fuel saving warrants additional investment. The two blankets are attached to header at the same time, but it is best to expand them separately as shown.

Figure 5→

Suggested Specifications (Continued)

Insulation shall be installed in accordance with manufacturer's specifications. The ends of the blankets shall be firmly anchored with pieces of wood lath and nails driven through both lath and blanket into headers and sills. Sheathing nails 2 in. long shall be driven through KIMSUL blanket and into the sheathing every 15 in. of vertical distance and 3 in. from each edge of the blanket. These nails shall not be driven far enough to compress the blanket.

In sloping roofs the KIMSUL shall be anchored at each side of the blanket with wood lath and nails.

All spaces around window and door openings in the exterior walls are to be caulked with odd pieces of KIMSUL.

When the KIMSUL has been installed a *vapor-barrier* of waterproof paper is to be tacked in place with overlap of at least 2 in. at all joints.

Supplementary Specifications (to be included under Other Division).

Construction—Framing shall be 16 in. on centers.

Note: This dimension will make standard KIMSUL blankets fit exactly between studs.

When KIMSUL is used it is unnecessary to buy other materials for caulking around door frames and window casements. Small pieces of it can be easily rammed into cracks, no matter how tiny, with the assurance that the fibers will pack tightly enough to eliminate leakage.

←Figure 6

Application of the vapor-proof seal is accomplished as shown here. A generous overlap should be allowed at edges in order to block out the vapor completely and thus prevent condensation of moisture within the wall.

Figure 7→

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES

ATLANTA, GA. CHICAGO, ILL. CLEVELAND, OHIO HOUSTON, TEX. NEW YORK, N. Y. PHILADELPHIA, PA. SAN FRANCISCO, CALIF.

For K&M Asbestos Roofing and Siding Shingles, Decorative Wallboards, Pipe, Sheet and Block Insulations, Asbestos Corrugated and Trafford Tile, see File Index

K&M "CENTURY" MINERAL WOOL HOME INSULATIONS

K&M "Century" Mineral Wool Home Insulation is available in many forms to meet every kind of application in either old or new home construction. K&M "Century" Mineral Wool Home Insulation may be poured, hand packed, or applied in bat or roll form. K&M "Century" Mineral Wool is an ideal insulation against summer heat or winter cold—actual tests show that homes insulated with it are up to 10% cooler in summer and save up to 30% on fuel costs in winter.

K&M "Century" Mineral Wool will not burn. It seals off the hollow flue-like space between outside wall and plaster, as well as the space between top floor ceiling and roof. The application of K&M "Century" Mineral Wool guarantees less furnace forcing, which means less chance of overheating pipes and flues, thereby greatly reducing fire hazards.

K&M "Century" Mineral Wool seals cracks and openings that permit infiltration of air, retards flow of air currents because it assures more even room temperatures. Draughts are materially reduced and ventilation is under positive control. K&M "Century" Mineral Wool serves as a deadener of outside noises. It is termite-proof because of the fact that it is an inert and indestructible wool made from minerals.

AVAILABLE FORMS OF K&M "CENTURY" MINERAL WOOL INSULATION

Wall-Thick Paper Backed Bats

Generally used for wall and ceiling insulation in new construction. Can be readily applied between studs and rafters and fastened in place by nailing flange of paper backing to construction member. Can be easily cut to fit irregular spaces. Has water repellent paper backing and water repellent stiffening treatment. Furnished in 15″ x 23″ and 15″ x 48″ sizes.

Quick Application with Wall-Thick Paper Backed Bats

Thrift Paper Backed Bats

Same as Wall Thick Bats, except for thickness, which is 2″. Also have water repellent paper backing and water repellent stiffening treatment.

Granulated Mineral Wool

K&M "Century" Mineral Wool in granulated form is ideal for application between walls, over flat and sloping ceilings in new or old construction. Furnished in 30 lb. bags. Recommended covering capacity 15 sq. ft. to a bag, applied 4″ thick for flat work and 11 sq. ft. to a bag applied between 2″ x 4″ studs for partitions and side walls.

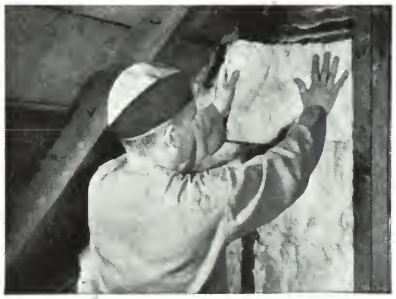
Spreading Granulated Mineral Wool

Loose Mineral Wool

A long fibre form of K&M "Century" Mineral Wool, suitable for hand packing between joists or studs in new construction, or in irregular places anywhere in the house. Comes in 35 lb. bags. Recommended covering 13 sq. ft. to a bag, applied 4″ thick.

Econopac

Econopac is supplied in pads 12″ by 15″. An economical wall thick insulation that is packed 16 pieces to a paper bag, which gives a net covering capacity of 20 sq. ft. Applied between construction members with maximum spacing 16″ centers. Not furnished with paper backing or water repellent treatment.



Application of Econopac Between Construction Members

P. C. LEONARD COMPANY

45 Washington Street, North, BOSTON, MASS.

NATIONAL SALES DIVISION FOR

Jiffy Blanket House Insulation and Sound Reducing Products of
JIFFY MANUFACTURING CO., 360 FLORENCE AVENUE, HILLSIDE, N. J.

Uses

Heat Insulation—Jiffy Blanket in walls, ceilings, and roof effectively insulates all types of buildings, keeping them cooler in summer, warmer and more economical to heat in winter.

Sound Reducing—Properly installed in partitions and floors Jiffy Blanket possesses high efficiency for reduction of sounds carried through ordinary uninsulated construction.

Description

Paper (the best known insulator) is macerated (*pulled* apart, not cut) into fibrous flakes forming a mass of air cells having great heat insulating value. These are mixed with effective flameproofing material and drifted between two layers of heavy flameproofed Kraft paper which have been thoroughly coated on the inside with melted asphaltum. Jiffy is then sealed around all edges and at 16-in. intervals across each strip.

Absolutely Moistureproof—Jiffy Blanket's excellent insulating value is completely and permanently protected against hazards of wind and moisture by this one reliable method used by architects and builders to weatherproof houses—asphalt and paper.

Divides the Air Space—Jiffy Blanket is made to accurately divide the air space, conforming to practice recommended and used by leading engineers.

Tests

Copies of tests for conductivity made by Prof. Gordon B. Wilkes at M.I.T.; and for sound reducing made by Dr. Wm. R. Barss in his laboratories at Cambridge, Mass. will be sent on request.

Insulating Value

Thermal—(*Note: Single thickness—approximately 7/16 in.*) Coefficients of heat transmittance (B.t.u./hr./sq. ft./1° F.)

Standard wall alone—clapboards, paper, sheathing, air space, lath, plaster, "U" value .26.

Same wall insulated with:

Single thick Jiffy, flameproof kraft cover..... .135
Single thick Jiffy, aluminum coated flameproof kraft cover..... .124
Double thick Jiffy, flameproof kraft cover..... .109

Sound—Jiffy Blanket, installed the usual way between studs, proves effective as an economical and practical sound reducer.

The addition of 1, 2, 3 and 4 thicknesses of Jiffy Blanket to a standard double wall partition gives the following reductions in decibels over the same wall without Jiffy Blanket:

Frequency	Thickness of Jiffy Blanket, in.			
	1	2	3	4
128	2.1	3.6	4.1	4.7
256	4.0	5.8	6.8	7.3
512	4.8	5.5	6.5	6.5
1024	3.6	7.0	8.1	8.6
2048	7.0	7.5	8.2	8.6
Average	4.3	5.9	6.8	7.2

From experimental work on reduction of loudness due to reduction of noise level in decibels it has been found that reduction in decibels according to above table, starting with an original sound level of 29.5 decibels, will give the following percentage reduction in loudness:

Single thick Jiffy, 55%.
Double thick Jiffy, 69%.
Triple thick Jiffy, 74%.
Four thicknesses Jiffy, 76%.

Jiffy Blanket Features

Jiffy embodies all the desirable features of a good insulation. Ask for a sample and make your own tests. Jiffy Blanket is windproof, waterproof, moistureproof, verminproof, flameproof; clean; durable; easy to install.

SPECIFICATIONS

To fit studs measuring center to center	Use blanket size No.	Linear feet per carton single thickness	Square feet per carton
10 in.	10	100	100
12 in.	12	100	117
14 in.	14	100	134
16 in.	16	100	150
18 in.	18	100	167
20 in.	20	100	184
22 in.	22	100	200
24 in.	24	100	217
28 in.	28	100	250
32 in.	32	100	284
36 in.	36	100	317

Shipped single thickness, install double thickness for best results.
Weight: single thickness,—250 lbs. per 1000 sq. ft.
Packing strips—for packing around window and door frames, and all narrow spaces, size 5 x 48 in. Carton—100 strips. Standard Jiffy construction and features.

Measuring For Bill of Materials

(1) Determine total linear feet required in each width.
(2) Multiply by two for double thickness.
(3) Adjust to nearest carton.
(4) Convert to square feet.
Order by cartons of each required size.

Application

Jiffy Blanket is easy to install, one reason for its popularity among carpenters, builders, and home owners. No skin irritation; no mess; a simple nail and hammer proposition.

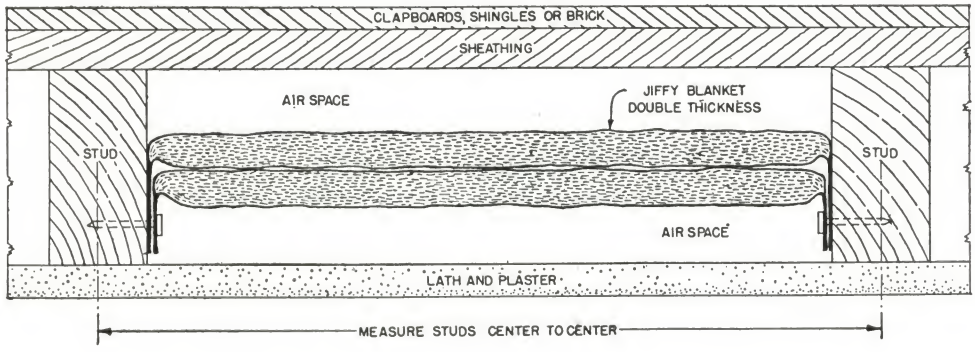
The range of widths saves time, avoids waste; no cutting or chopping to fit stud spaces. Cut for length along the nearest cross seal. With Jiffy you never have to cut through the insulating pad to fit small odd shaped spaces. Fold it instead. Those important inside flakes which do the insulating need never be exposed to wind and moisture.

Cut Jiffy to proper length. Fold to thickness desired. Using selvage as handle, press Jiffy between studs, joists, or rafters, until selvage edge comes flush with face of stud. This correctly divides the air space and is the easiest way to handle Jiffy. Nail the selvages at intervals of 6 to 8 ins.

Jiffy Blanket installed between rafters in roof slopes, and other overhead areas not strapped, should be supported by lacing a light wire back and forth under it.

For Attention

When you want information or assistance you want it prompt and practical. Our organization is founded on that understanding. Look for "Jiffy" in your local telephone book, or write headquarters for action.



MEMORANDA

SPRAYO·FLAKE INSULATION

★

Heat·Sound·Acoustical Correction

TECHNICAL DATA *and* SPECIFICATIONS

★

SPRAYO·FLAKE COMPANY

Chicago, Illinois

SPRAYO

SPRAYO-FLAKE COMPANY

Manufacturers of Sprayo-Flake Insulating Materials
and Application Equipment

• • •

General Offices: CHICAGO, ILLINOIS
Licensed Applicators in Principal Cities

• • •

SPRAYO-FLAKE INSULATING PROCESS—The Sprayo-Flake Process is unique in that it fabricates and applies insulation on the job in a single, efficient, and economical operation.

Briefly described, the process consists of forcibly projecting, with a specially constructed air-gun, dry, fibrous flakes simultaneously with an atomized adhesive. The fibrous flakes are inherently fireproof or have been impregnated with a fireproofing agent.

The atomized adhesive coats the fibers as they leave the air-gun nozzle and causes them to build up in a homogeneous, cellular mass or blanket upon the surface against which the gun is directed.

Sprayo-Flake can be applied to any surface (wood, masonry, concrete or metal) in any thickness required for effective thermal insulation.

This process, the application equipment and the finished insulating mat are fully protected by U. S. and Canadian patents.

DEVELOPMENT—The Sprayo-Flake process was conceived by a layman while observing the installation of insulating material in his own home. Conscious of the necessity for unbroken continuity of the insulation, if this is to prove thoroughly effective as a thermal barrier, and observing the difficulty of accomplishing this end under ordinary methods of application, he evolved the spray gun method.

Development of the original idea dates back to the year 1924 when the specially designed equipment was perfected for applying Sprayo-Flake followed shortly by the adoption of a practical and permanent adhesive agent.

The Sprayo-Flake method of insulating eliminates much of the hitherto expense of manufacturing and marketing. The fabrication and application are accomplished with the greatest ease and rapidity ON THE JOB in one operation. Any thickness needed is immediately obtainable. Only the raw, bulk material, the fibrous flakes (treated with the fire-resisting agent) or fireproof fibers and the adhesive agent are shipped at minimum expense directly to the job to be machine applied by experienced applicators.

ADAPTABILITY—Sprayo-Flake Insulation is available for thermal insulation in Homes and Industry (Residences, Commercial Buildings and Industrial Plants). Not only is it low in thermal conductivity but it is unique in its prevention of condensation—the final surface coating of emulsified asphalt is a definite warm side barrier to the passage of moisture vapor. Applied as a blanket over metal air conditioning ducts, it eliminates to a marked degree duct vibration and fan noise communication. Spray-Acoustic, the acoustical adaptation of Sprayo-Flake, ranks high in its sound absorbing efficiency, coupled with its fine continuous, unbroken surface appearance which in no way detracts from the architectural treatment as a whole.

DISTRIBUTION AND SERVICE—Sprayo-Flake is supplied directly **from the factory to the job** through licensed applicators. These licensed applicators, located in the principal building centers, are insulation specialists, financially responsible, and work on an exclusive franchise basis. Each installation is made by expert, trained mechanics under exacting supervision.

This advanced plan of distribution and application enables the architect, builder, and owner to know the exact cost of the insulation in place. Sprayo-Flake is always quoted on a basis of unit price per square foot or lump sum bid including both labor and material.

In the case of Spray-Acoustic, due to the wide difference in acoustical and sound deadening problems, it is important to utilize for consultation the efficient engineering service maintained in both the local and general offices of the Company.

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Sprayo-Flake Moistureproof

SPRAYO-FLAKE APPLICATIONS

VERSATILITY—It should be borne in mind that Sprayo-Flake is in reality a PROCESS of application more than a particular product—a versatile process contemplating the use of fibrous insulating materials and adhesives suited to simultaneous air-gun application. New types of Sprayo-Flake are now under development contemplating the use of several new types of both fibrous materials and adhesives which may be used in a variety of combinations, each particularly adapted for a specific purpose.

SPRAYO-FLAKE THERMAL INSULATING BLANKET—Sprayo-Flake is gun applied in any desired thickness directly to the surface to be insulated. See pages 5 and 6.

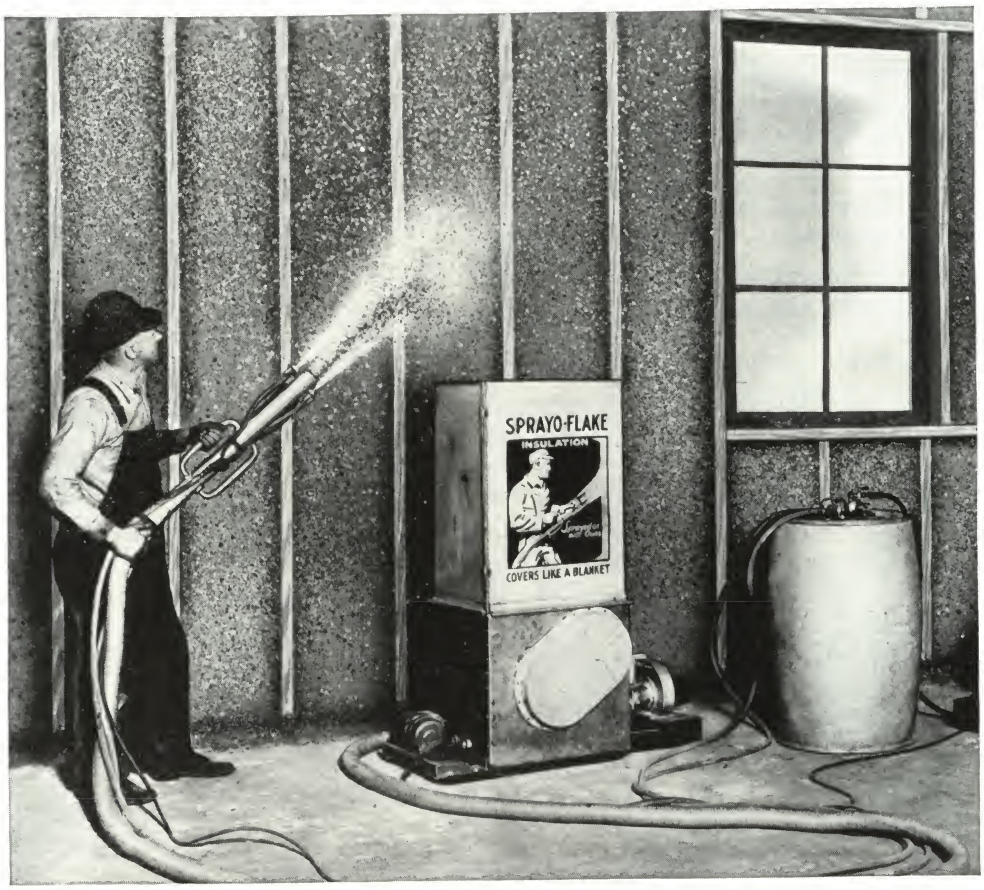
SPRAYO-FLAKE PLASTER BASE—A special application which dampproofs and insulates masonry walls and forms a practical plaster base with bonding strength in excess of 300 lb. per square foot. The cost of furring and lathing is eliminated. Insulation thickness is ⅝ inch. See pages 5 and 6.

SPRAYO-BATT—A combination of Rock Wool and Sprayo-Flake which seals the Rock Wool on the inner or warm side and prevents the passage of moisture vapor through the wool to condense and form frost or ice in the wool. A 2 in. thick Rock Wool Batt is placed next to the sheathing or roof boarding between the studs or rafters. The batts are retained permanently in position by steel Z spring clips. Over the Rock Wool Batts thus installed is sprayed a seal coat of Sprayo-Flake averaging ⅜ in. in thickness which, due to the emulsified asphalt binder, seals off the batts with a vaporproof coating. See page 9.

SPRAY-ACOUSTIC — Spray-Acoustic, like Sprayo-Flake, is fabricated and applied in one operation on the job utilizing the air-gun method. The same flexible material is applied for a base coat, but the firm, absorbing, exposed surface is achieved by the introduction of pastel colors in the binder which tints the last fraction of an inch of the material to suit the general decorative scheme. Spray-Acoustic adheres to any structurally sound surface and obviously will conform to any contour. It is a continuous application of uniform texture, with no joints, seams, or other application complications which detract from or conflict with the architectural design. Special catalog on request.

NOTE: **The coefficients of absorption shown below are from tests made by Clifford Melville Swan, Acoustical Engineer, New York City. Other coefficients by Riverbank Laboratories, Geneva, Ill.*

Pitch	C2	C3	C4*	C5	C6	Noise Red. Coef.
Frequency	128	256	512*	1024	2048	
½-in. thick.....			.45*			
¾-in. thick.....	.21	.44	.61*	.71	.70	.54
1-in. thick.....			.70*			



SPRAYO-FLAKE SOUND DEADENING — Various types of effective sound-deadened partition and floor constructions available through the application of Sprayo-Flake are shown in detail hereafter. Sprayo-Flake Plaster Base applied to interior masonry partitions as well as masonry exterior walls furnishes a break in density effective in reducing sound transmission. The introduction of this elastic, resilient material reduces the sound vibration to such a point that it is not discernible above ordinary occupational noise. The sound deadening of air conditioning duct work through a blanket of Sprayo-Flake Insulation applied at low cost directly to the outside of the metal work is a particularly successful adaptation of the material to noise abatement. See pages 7 and 9.

Thermal Insulating Blanket

PHYSICAL CHARACTERISTICS--ADVANTAGES

SPRAYO-FLAKE COMPOSITION—Standard Sprayo-Flake is composed of dry flakes of fibrous material, impregnated with a fire-resisting agent, atomized emulsified asphalt as a binder and surface adhesive, both gun applied, forming a homogeneous, cellular blanket of any desired thickness.

LOW THERMAL CONDUCTIVITY—0.246 B.t.u. per hour, per square foot, per inch thickness, per degree temperature differential.

FIRE RESISTANT—Chemically treated or inherently fireproof fibrous materials, plus the emulsified asphalt binder produce a highly fire-resisting insulation.

VAPORPROOF—In the light of recent discovery that most insulating materials permit the free passage of water vapors through their structures causing condensation problems, especially during winter construction and in air conditioned buildings, it is a significant attribute that Sprayo-Flake, due to the emulsified asphalt binder and the final surface coat of the same material renders the insulation blanket impervious to the passage of moisture vapor.

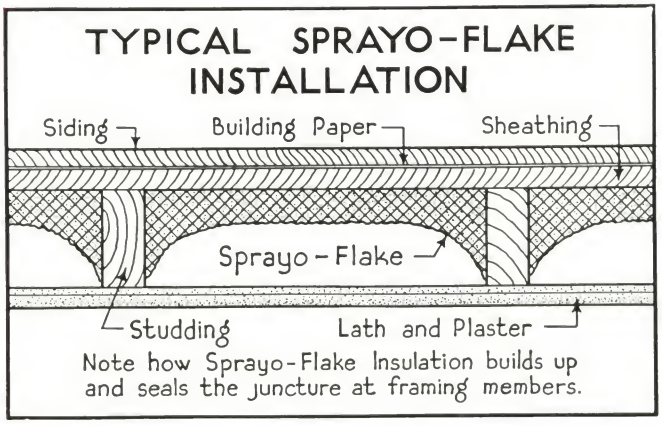
STOPS AIR INFILTRATION THROUGH BRICK WALLS—Air infiltration through a 13-inch brick wall with a 15 mile wind velocity varies, dependent on the porosity of the brick and the care with which it is laid up, from 7.5 to 2.5 cubic feet per hour per square foot. Sprayo-Flake applied on the inside of such a wall, because of its sealing qualities, reduces this air infiltration factor to practically zero.

VERMIN AND TERMITE PROOF—Where emulsified asphalt binder is used in conjunction with mineral admixtures, these render Sprayo-Flake insulation repellent to vermin and termites.

LIGHT WEIGHT—The fibrous, cellular structure weighs but 4.6 pounds per cubic foot installed.

PERMANENCE—The adhesive properties of emulsified asphalt and that it will not deteriorate with age have long been recognized.

The fabricated blanket of Sprayo-Flake Insulation is held permanently in place and the fibrous flakes bound firmly together in a cellular structure by emulsified asphalt. This binder also preserves the flakes from deterioration.



RESILIENCY—Sprayo-Flake is sufficiently resilient to compensate for the usual expansion, contraction, and settlement of the building structure to which the insulation blanket is applied without in any way destroying its continuity or effectiveness. This has been particularly obvious in installations on ceilings of railway box cars subject to maximum vibration and distortion by impact as tested over a considerable period of time.

PLASTER BOND—When the Sprayo-Flake blanket is applied over a dampproofed masonry wall in accordance with the Sprayo-Flake standard specification, the insulation forms an excellent, permanent plaster base. Authentic tests show its plaster bond strength to be in excess of 300 lb. per square foot. When used as an insulating plaster base, its natural resiliency is of marked advantage in preventing cracks, prone to occur where the plaster is applied directly over rigid masonry subject to settlement, etc. While Sprayo-Flake is a cellular structure, it is homogeneous and sufficiently firm and cohesive to meet all plaster base requirements.

SOUND ABSORBENT—The cellular structure and resiliency of Sprayo-Flake render it a highly sound absorbent material. Due to its continuous unbroken surface when applied to upper walls and ceilings, it has proven an excellent acoustical material harmonizing with any architectural treatment. The surface may be finished in any color desired. It is particularly effective in abating air conditioning duct noises when applied, at low cost, in a blanket over metal duct work.

UNIFORMITY—Air-gun applied by experienced applicators, Sprayo-Flake is mechanically controlled to produce a standard product of uniform physical characteristics.

PRACTICABILITY—Sprayo-Flake can be applied over any surface—wood, masonry, concrete, metal, etc.—in any thickness required for effective thermal insulation. Unlike most insulating materials, it seals all cracks and crevices and caulks around window and door frames when initially installed without time-consuming procedure.

LOW COST—Sprayo-Flake eliminates all elaborate space-consuming factory fabrication, warehousing of manufactured stock both at the plant and at distribution centers, and careful handling during treatment and erection. Only the bulk, raw material (the flakes) and adhesives are shipped and these directly to the job. There fabrication and application are accomplished by the special blowing and atomizing gun-type machine operated by experienced applicators. A two-man crew can apply 1,500 square feet per one inch thick per eight hour day per single machine. The usual cutting and fitting on the job is obviously entirely eliminated.

Sprayo-Flake Moistureproof

HEAT TRANSMISSION

Through Insulated and Uninsulated Construction

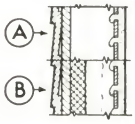
Expressed in B.t.u. per hour, per square foot, per degree difference in temperature

All transmissions conform to the figures for heat flow as given in the current Guide of the American Society of Heating and Ventilating Engineers.

To have a definite check for Sprayo-Flake calculated factors, three typical walls of standard construction insulated with Sprayo-Flake were tested by Prof. Frank B. Rowley of the University of Minnesota. His large "Hot Box" method for testing over all-wall transmission, as approved by A. S. H. & V. E. code was utilized.

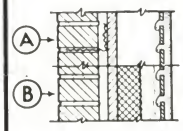
Prof. Rowley's Tests, copies of which will be furnished promptly on request, prove the calculated coefficients correspond so closely with the actual test coefficients that the factors are safe for estimating heat losses, radiation and fuel requirements for ordinary construction.

Construction—(A) Bevel Siding, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



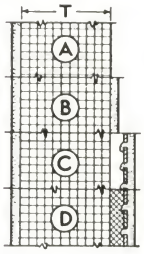
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.250	0.167	0.125	0.100	0.083	0.071

Construction—(A) Brick Veneer, Air Space, Building Paper, Sheathing, Studding, Lath and Plaster. **(B)** Same as (A) plus Sprayo-Flake Insulation.



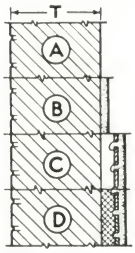
A—Not Insulated	B—Sprayo-Flake Insulated				
	½ in.	1 in.	1½ in.	2 in.	2½ in.
0.270	0.175	0.130	0.103	0.085	0.073

Construction—(A) Stucco—Tile. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring, Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake.



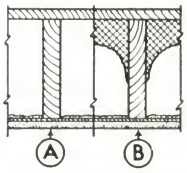
Thickness T	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8 in.	0.40	0.38	0.26	0.170	0.146	0.128
12 in.	0.30	0.29	0.22	0.152	0.133	0.117

Construction—(A) Brick. **(B)** Same as (A)—Plastered. **(C)** Same as (A)—Furring Lath and Plaster. **(D)** Same as (C) plus Sprayo-Flake Insulation.



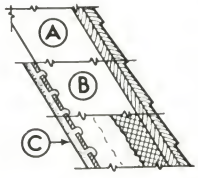
Thickness T	Not Insulated			D—Sprayo-Flake Insulated		
	A	B	C	½ in.	¾ in.	1 in.
8½ in.	0.50	0.46	0.30	0.187	0.158	0.136
13 in.	0.36	0.34	0.24	0.163	0.140	0.123

Construction—(A) Single Attic Flooring—Joists—Lath and Plaster. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



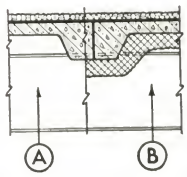
A—Not Insulated	B—Sprayo-Flake Insulated			
	1 in.	1½ in.	2 in.	2½ in.
0.280	0.132	0.104	0.086	0.073

Construction—(A) Shingles, Building Paper, Boarding, Rafters. **(B)** Same as (A)—Lath and Plaster. **(C)** Same as (B) plus Sprayo-Flake Insulation.



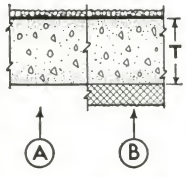
Not Insulated		C—Sprayo-Flake Insulated		
A	B	1 in.	1½ in.	2 in.
0.56	0.32	0.140	0.110	0.090

Construction—(A) Built-up Roofing—1 inch thick Precast Cement Tile supported on steel purlins. **(B)** Same as (A) plus Sprayo-Flake Insulation.



A—Not Insulated	B—Sprayo-Flake Insulated			
	1 in.	1½ in.	2 in.	2½ in.
0.840	0.193	0.139	0.109	0.089

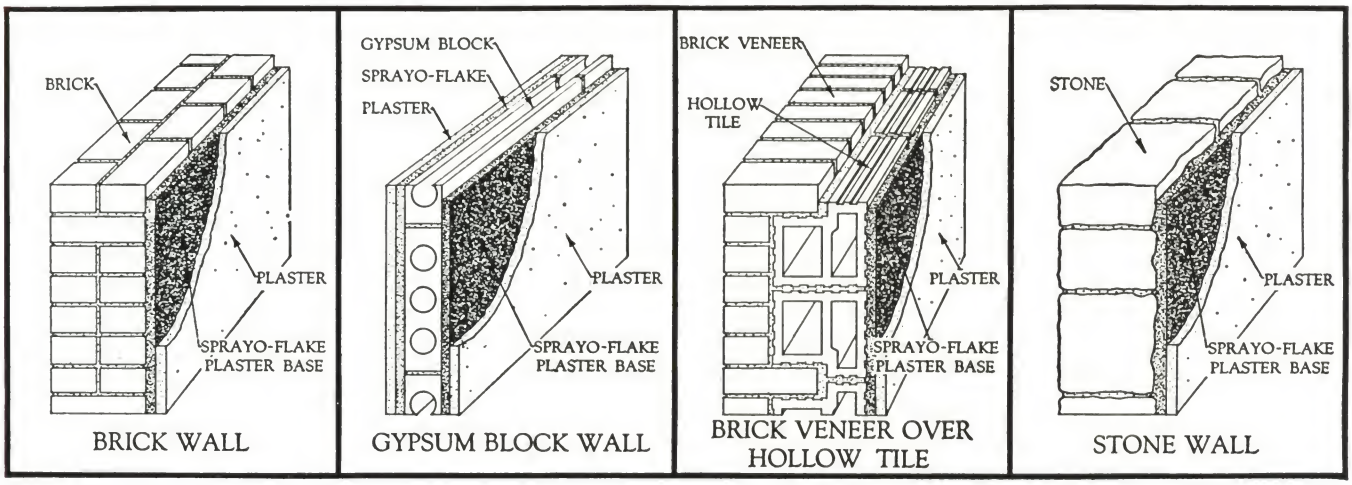
Construction—(A) Built-Up Roofing—Concrete Roof Slab. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



Thickness T	A—Not Insulated	B—Sprayo-Flake Insulated		
		1 in.	1½ in.	2 in.
4 in.	0.72	0.185	0.135	0.106
6 in.	0.64	0.180	0.132	0.105

Thermal Insulating Blanket

SPRAYO-FLAKE PLASTER BASE ON MASONRY WALLS



Sprayo-Flake Plaster Base solves the disturbing problem of how to dampproof, insulate, and lath solid masonry walls economically. It is a well-known fact that in most localities dampproofing is a necessity; also, that when applied it not infrequently leaves the wall in an unsatisfactory condition for plaster.

Sprayo-Flake Plaster Base is applied with the same process and ingredients as our other products, but the proportions are distinctly varied. The result is a product rich in dampproofing qualities but still resilient enough to absorb ordinary building strains, practically eliminating the danger of unsightly cracks, and so forth. The facts contained herein have been arrived at through exhaustive tests conducted in our own plant as well as in the field for the past seven years.

When used on either interior or exterior partitions, it must not be overlooked that the base obtained for plaster is unique, in that a combination suction and mechanical bond is obtained. The plaster base has a rough, hard surface to which plaster may readily key mechanically, yet is porous enough to offer an excellent suction bond. Tests conducted at the Detroit Builders and Trades School on this particular point indicate a bonding strength in excess of 300 lbs. per sq. ft.

Sprayo-Flake Plaster Base may be applied to interior partitions as well as exterior walls, thereby furnishing a break in density invaluable in reducing the passage of sound. The introduction of a resilient material reduces vibration to a point where it is not discernible above the ordinary occupational noises.

TYPICAL SPRAYO-FLAKE APPLICATIONS

Typical residential installation on outside frame walls and top story ceiling insulated with Sprayo-Flake Thermal Insulation.

Roof Slopes and Attics Are Efficiently Insulated with Sprayo-Flake—No Nails, Seams or Laps.

Sprayo-Flake Moistureproof

Master Specifications

SPRAYO-FLAKE THERMAL INSULATION

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work.*

NOTE: *Sprayo-Flake Thermal Insulation is always installed on a contract basis (labor and material included) by responsible applicators employing trained mechanics. This assures a completely continuous blanket of uniform density applied mechanically under exacting supervision. No deviation from good standard construction practice is necessary. The air-gun method of application permits application to any surface in any thickness. All cracks, crevices, and usually inaccessible places are automatically sealed.*

(1) CORRELATIVE PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(1a) CONSTRUCTION—For wood frame construction, follow the recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association. For masonry construction, follow standard construction practice.

(1b) FURRING—Where Sprayo-Flake Insulation is installed on the inside of exterior masonry walls, furnish and apply **(specify size)** furring strips spaced 16 in. O. C. to receive interior lathing and plastering. Strips shall be of sound, straight lumber accurately shimmed to a true, level plane.

NOTE: *Omit if Sprayo-Flake Plaster Base is used.*

(1c) GROUNDS—Where Sprayo-Flake Plaster Base is installed on masonry walls, furnish and erect at the top and bottom of the wall a ⅝ in. thick ground or screed. Shim ground to a true, level plane.

(2) WORK INCLUDED

NOTE: *Here list and locate definitely the wall, ceiling, and roof areas to be covered and the insulation thickness required. If more than one thickness is used, list separately and the respective locations or areas covered. If exterior masonry walls are to be dampproofed and insulated with Sprayo-Flake Plaster Base, list separately and the area so treated.*

On exterior walls, roofs, and top story ceilings in frame construction, depending on the insulation requirements for the particular location (see Coefficients, page 4), Sprayo-Flake is applied ½, 1, 1½, 2, or 2½ in. thick. On exterior masonry walls it is customary to specify a ¾ or 1 in. thickness between furring strips. Sprayo-Flake Plaster Base is ⅝ in. thick.

(3) MATERIAL

Thermal insulation shall be Sprayo-Flake as manufactured by the Sprayo-Flake Company, Chicago.

(4) APPLICATION

(4a) GENERAL—The Sprayo-Flake Insulating Blanket shall be installed by experienced mechanics under the direct supervision of Licensed Applicators.

(4a1) Method—Application shall be by the Sprayo-Flake air-gun method.

(4a2) Thicknesses—The Sprayo-Flake shall be applied to the various areas uniformly to the full thicknesses specified in paragraph (2).

(4a3) Continuity—Continuity of insulation is imperative. Except for the interposition of structural members and window and door openings, the Sprayo-Flake Blanket shall completely enclose all heated, occupied space in the building forming an effective barrier to heat transmission. This shall include the effective sealing of all interstices and especially those surrounding window and door openings. Special care shall be exercised to permanently seal the juncture between the Sprayo-Flake Blanket and interposing structural members.

(4b) FRAME CONSTRUCTION—In frame construction the Sprayo-Flake Insulation shall be installed between the structural framing members.

(4c) FURRED MASONRY WALLS—In applying the Sprayo-Flake Insulation to furred exterior masonry walls, first spray a sufficient amount of emulsified asphalt to the wall and along the edges of the furring strips to assure effective dampproofing over the entire wall area including that back of the strips; then apply the Sprayo-Flake Blanket to the required thickness between the furring strips leaving a slight air space between the surface of the insulation and the back of the lathing.

SPRAYO-FLAKE PLASTER BASE ON MASONRY WALLS

First, thoroughly clean the masonry surface by compressed air removing all dirt, loose mortar particles, etc.

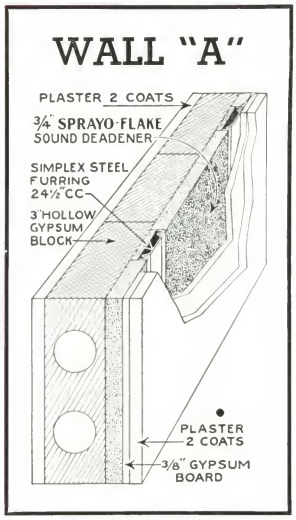
Second, prime the masonry surface with a gun-applied priming coat consisting of one (1) part of emulsified asphalt to four (4) parts of water. In the case of extremely porous masonry this operation shall be repeated after complete penetration of the first coat is achieved.

Third, apply the Sprayo-Flake Insulating Plaster Base to the primed, dampproofed masonry surface of ⅝ in. thick. In the case of rough masonry, irregularities shall not exceed 1¼ in. in depth and all such depressions must be filled level with Sprayo-Flake following the priming before the standard application is made.

Fourth, after application, the Sprayo-Flake surface shall be troweled semi-smooth and the entire surface given an over-spray of emulsified asphalt of the same consistency as the priming coat.

NOTE: *Standard Sprayo-Flake Plaster Base is ⅝ inch thick. Where dampproofing or sealing against air infiltration is of more importance than insulation this base may be reduced to ⅜ inch.*

SPRAYO-FLAKE SOUND INSULATION ON WALLS



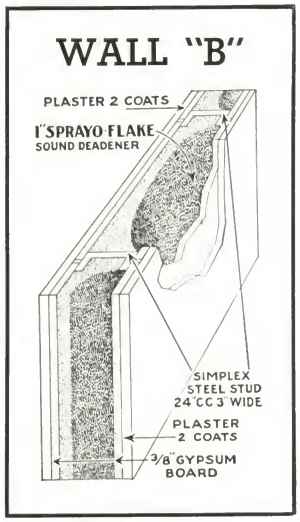
The following data applying to sound insulation are the results of tests made on walls of the LeClaire Apartments, Milwaukee, by the C. F. Burgess Laboratories, Inc., Madison, Wisconsin.

WALL "A"—The construction of wall "A" consisted of 3 inch standard hollow gypsum partition tile, plastered with ½ inch of gypsum plaster on one side and Simplex Steel Furring, ¾ inch Sprayo-Flake, ⅜ inch gypsum lath covered with ½ inch of gypsum plaster.

Logarithm of Reduction 6.27
Reduction in Sensation Units 62.70

WALL "B"—The construction of wall "B" consisted of Simplex Steel Studs, ⅜ inch gypsum lath covered with ½ inch of gypsum plaster on both sides and 1 inch of Sprayo-Flake.

Logarithm of Reduction..... 4.75
Reduction in Sensation Units.....47.50



WALL "C" (For Comparison)—The construction of Wall "C" consisted of 3 inch standard hollow gypsum partition tile, plastered with ½ inch of gypsum plaster on both sides.

Logarithm of Reduction..... 3.15
Reduction in Sensation Units 31.50

WALL "D" (For Comparison)—The construction of Wall "C" consisted of 4 inch standard hollow clay partition tile, plastered with ½ inch of gypsum plaster on both sides.

Logarithm of Reduction..... 3.95
Reduction in Sensation Units.....39.50

SPRAYO-FLAKE SOUND INSULATION ON FLOORS

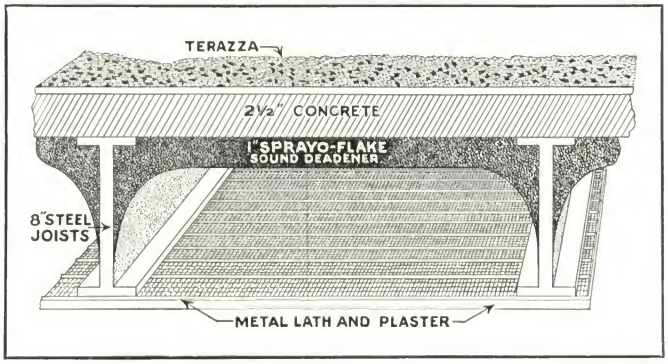
To obtain practical construction test data, the Sprayo-Flake Company utilized the services of The C. F. Burgess Laboratories (under the personal supervision of Mr. R. F. Norris), recognized as authorities on this subject throughout the country. These scientific sound transmission tests of sound insulation methods in modern completed and occupied buildings are the most advanced data we are able to locate to date.

Standard Steel Joists and Concrete Floor.

The series of tests were made for the Sprayo-Flake Company on the floors in the Milwaukee County Hospital.

The terrazzo-concrete floors were typical one above the other and of the same construction, differing only in that one floor had 1 in. of Sprayo-Flake Sound Insulation applied to the underside of the floor section and to the sides of the metal joists.

Comparing the two floors—one uninsulated and the other sound insulated with Sprayo-Flake: Neither floor transmitted air-borne sounds; but when impact tests were made on these typical floors, it was found that five and one-half (5½) times as much noise in physical units passed through the floor in which Sprayo-Flake had not been used.



Sprayo-Flake Moistureproof

SPRAYO-FLAKE INSULATION FOR STEEL INDUSTRIAL BUILDINGS

Sprayo-Flake has proven the most economical and practical insulation yet devised for steel industrial buildings as evidenced by many successful installations.

Air-gun applied to any required thickness, the insulating blanket adheres tenaciously to the inside surface of steel roof decking or sheet steel walls, unaffected by expansion and contraction or vibration.

Not only does Sprayo-Flake reduce winter heat loss, but summer temperatures within these buildings are held within reasonable bounds.

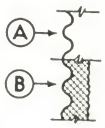
The Sprayo-Flake blanket under steel roof decks successfully prevents the nuisance of condensation and, at the same time, protects the deck from corrosive damage.

Railroads find Sprayo-Flake a thoroughly practical and economical insulation in steel freight cars subject to the maximum of vibration and jarring distortion.

Applied against the steel decks and hulls of ships, Sprayo-Flake has proven an effective preventative of cargo damaging condensation.

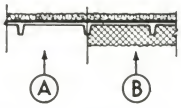
The tables below show the heat transmission coefficients through both insulated and uninsulated constructions expressed in B.t.u. per hour, per square foot, per degree temperature differential.

Construction—(A) Steel Frame Walls covered with Corrugated Sheet Steel. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.

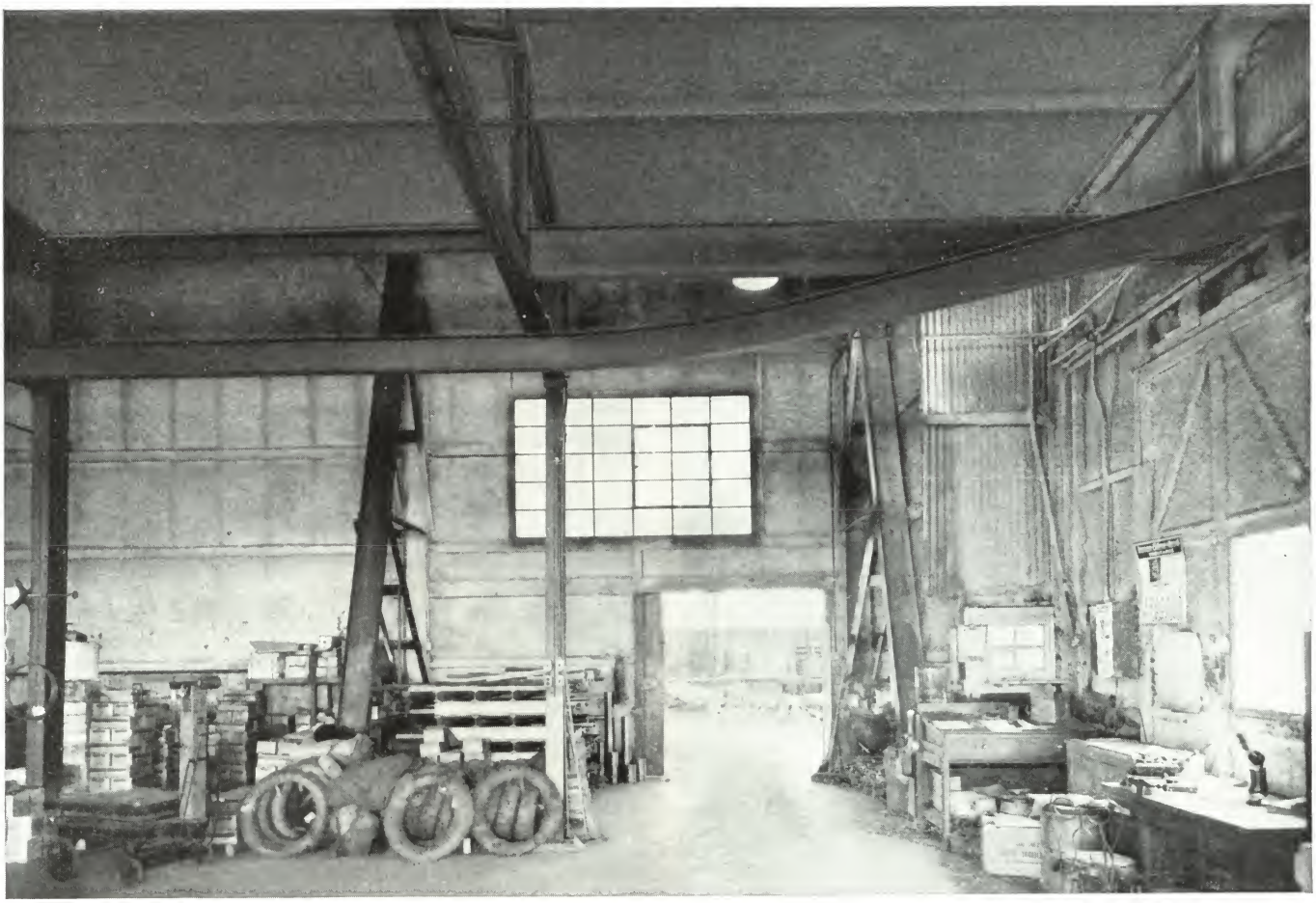


A—Not Insulated	B—Sprayo-Flake Insulated			
	½ inch	1 inch	1½ inch	2 inch
1.500	0.375	0.215	0.150	0.116

Construction—(A) Built-up Roofing—Steel Deck supported on steel purlins. **(B)** Same construction as (A) plus Sprayo-Flake Insulation.



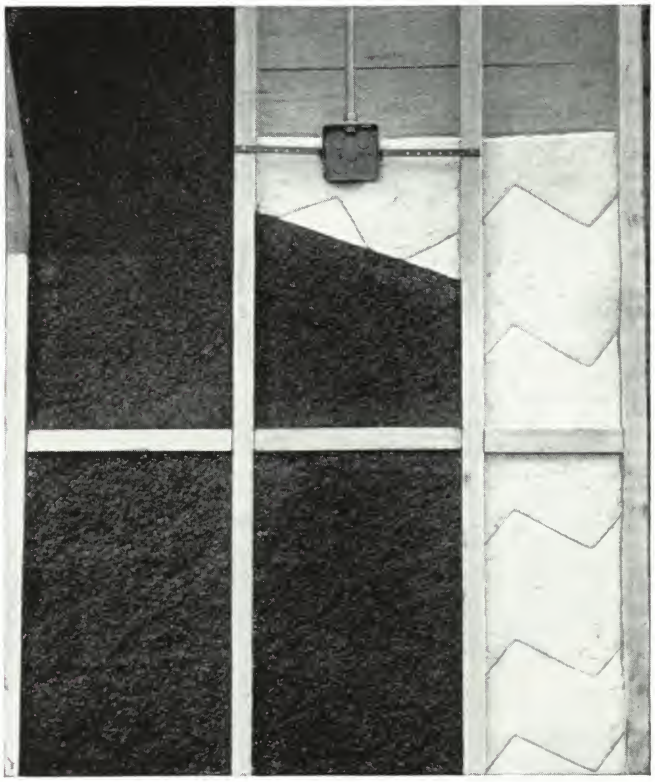
A—Not Insulated	B—Sprayo-Flake Insulated			
	½ in.	1 in.	1½ in.	2 in.
0.950	0.328	0.198	0.142	0.111



8

Thermal Insulating Blanket

SPRAYO-BATT THERMAL INSULATION



Recent scientific research has focused the attention of architects and engineers on the problem of condensation as it affects insulation.

The conclusions reached by these intensive laboratory tests as borne out by actual experience in the field have established the necessity of a moisture-vaporproof barrier on the inner or warm side of insulated exterior wall, top story ceiling, and roof areas.

This vaporproof barrier is particularly essential where Rock Wool insulation is installed. While Rock Wool is an excellent insulation, it does permit the free passage of vapor through it. To overcome this fault, it is now recommended that a vaporproof membrane be installed over the inner surface. Most building papers are not vaporproof and those that are depend for their effectiveness as a vapor barrier on the care with which they are installed.

Sprayo-Flake, since its inception, has been one of the few inherently moistureproof insulations.

Sprayo-Batt Thermal Insulation is a moisture resisting combination of Rock Wool and Sprayo-Flake. Two-inch thick Rock Wool Batts are installed between the wood framing members held in place by spring steel clips. Over the Rock Wool, thus installed, is air-gun applied on the inner or warm side a ⅜-inch thick blanket of Sprayo-Flake which successfully provides the necessary vaporproof barrier.

Sprayo-Batt over-all thermal conductivity is 0.10 B.t.u. per hr., per sq. ft., per deg. temp. differential.

SPRAYO-FLAKE DUCT INSULATION

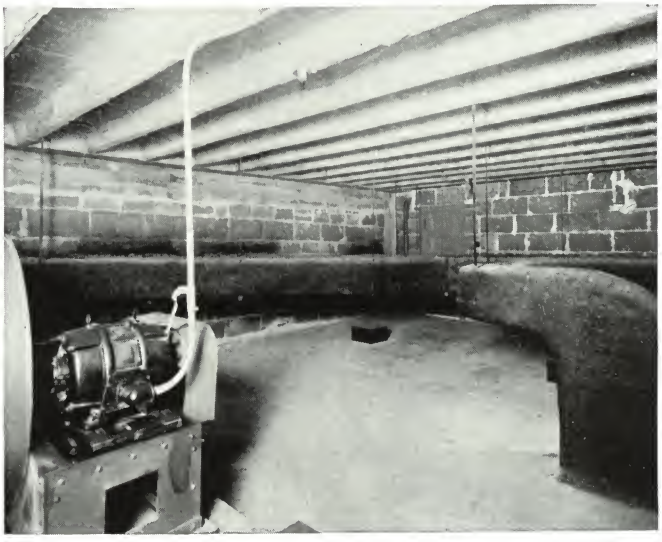
Sprayo-Flake Insulation has proven particularly adaptable for use over metal air conditioning duct work.

The insulating blanket of high thermal efficiency is applied on the job to any required thickness at a minimum cost after the duct work is in place. The moistureproof, protective, adhesive or binder attaches the blanket permanently to the metal without further mechanical aids and obviously follows any contour or shape without costly cutting, forming, and fitting.

The fibrous, insulating structure reduces to a minimum the transmission of distracting vibration, fan and similar ventilating duct noise.

Sprayo-Flake also prevents the heat loss and possible condensation within ducts carrying humidified, warm air through cold attic and similar spaces. Metal duct corrosion is practically eliminated.

Due to the air-gun method of application, the insulation may be built up over duct work in restricted spaces difficult to insulate with other materials.



Sprayo-Flake Moistureproof

SPRAYO-FLAKE BRAND ROCK WOOL

Snug Fitting Batts Are Easily Laid in Position

Sprayo-Flake Brand Rock Wool is available in batts, all kinds of blankets, and in granulated form—for use wherever these types of installations are required.

Sprayo-Flake Brand Rock Wool is fireproof, rotproof, moistureproof and verminproof.

Batts are available in conventional 15x23-inch or 15x48-inch sizes in two-inch and full-wall thicknesses. Batts are covered on one side with a **four-way** flap vapor-resisting membrane that provides positive protection against destructive condensation.

There is a complete line of commercial and industrial blankets available.

Batt Type Fits Between Studs and Is Faced by Vaporproof Paper

Blown-in Installations in Existing Structures

Existing structures can have all the advantages of Sprayo-Flake Rock Wool Insulation by means of the pneumatic "blown-in" process. No costly structural alterations are necessary. The job is done quickly and cleanly with a minimum of disturbance to the occupants of the building.

The "blown-in" process employs a pneumatic conveyor system. Power equipment of the system is mounted on a truck which can be parked at the curb. Long tubes convey granulated wool to the house.

Blown In—A Solid, Lasting Pack, Moistureproof, Verminproof

Where there are open joists, wool is blown in as shown in the illustration at left. In more inaccessible areas, skilled workmen insert the blowing tube in openings in the outer wall. Pressure packs the wool to a uniform density between the studding.

Spaces in Shingle and Stucco Walls Are Easily Reached

Hollow Spaces in Walls Are Thoroughly and Quickly Insulated

Thermal Insulating Blanket

REPRESENTATIVE SPRAYO-FLAKE INSTALLATIONS

INDUSTRIAL

Burlington Railroad Saw Mill Extension	Havelock, Neb.	10,000 sq. ft. of 1-in. insulation on roofs and walls for condensation control
Zenith Radio Corporation Plant	Chicago, Ill.	28,000 sq. ft. of 2-in. insulation on roof
Joseph T. Ryerson Company Plant (Also used in Milwaukee, Wis. Plant)	Chicago, Ill.	62,000 sq. ft. of 1-in. and 12,000 sq. ft. of 2-in. on walls and roofs for condensation control
Chicago Bridge and Iron Co.	Chicago, Ill.	7,800 sq. ft. of 1-in. insulation on roof
Continental Can Company	Chicago, Ill.	1-in. insulation on walls
Bear Brand Hosiery Mills Plant	Gary, Ind.	24,200 sq. ft. of 2-in. insulation on roof for condensation control

COMMERCIAL

Pennsylvania Union Terminal	Dayton, Ohio	36,000 sq. ft. of 1 and 2-in. thermal and sound insulation on underside of track levels
Cleveland Union Terminal	Cleveland, Ohio	46,000 sq. ft. of 1-in. thermal and sound insulation on underside of track levels
Medical Office Building	Washington, D. C.	12,500 sq. ft. of 1 and 2-in. duct insulation
R. C. A. Building	Radio City, N. Y. C.	Sound insulation of machine rooms

PUBLIC BUILDINGS

Municipal Auditorium	Minneapolis, Minn.	78,000 sq. ft. of 1-in. on underside of roof for condensation control
U. S. Veterans Bureau Hospital	Cheyenne, Wyo.	1-in. thermal insulation on walls
Administration Building Century of Progress	Chicago. Ill.	22,600 sq. ft. of 2½-in. on walls
University of Arkansas Library Building	Fayetteville, Ark.	13,400 sq. ft. of 2-in. on underside of roof
Staten Island Hospital	Staten Island, N. Y.	Sound insulation in floors
H. Rackham School of Graduate Students	Ann Arbor, Mich.	17,500 sq. ft. of thermal and sound insulation

HOTELS AND APARTMENTS

Wilshire Blvd. Apartment Hotel	Los Angeles, Calif.	Wall insulation on all thirteen floors
1301 Astor Building	Chicago, Ill.	82,000 sq. ft. of 1-in. sound insulation under all fourteen floors
Grant Blvd. Apartment Building	Detroit, Mich.	52,000 sq. ft. of 1-in. sound insulation
Farmington Ave. Apartment Building	Hartford, Conn.	120,000 sq. ft. of 1-in. sound insulation
Apartment Building	Mamaroneck, N. Y.	57,000 sq. ft. of 1-in. sound insulation

RESIDENTIAL

Herbert V. Kohler	Kohler, Wis.	Thermal insulation of walls
Walter Damrosch	Oyster Bay, L. I.	Thermal and sound insulation on walls and floors
Owen D. Young	Riverside, Conn.	Thermal insulation of walls
Stillman Rockefeller	Greenwich, Conn.	Thermal insulation of walls and roofs
Richard H. Grant	Dayton, Ohio	Thermal insulation of walls and roofs
Jack Sharkey	Boston, Mass.	Thermal insulation of walls and roofs

UNITED STATES MINERAL WOOL COMPANY

Manufacturers of Home and Industrial Insulation Products
Since 1881

TELEPHONE
Dearborn 8437

9 South Clinton Street
CHICAGO, ILL.

FACTORIES AT SOUTH MILWAUKEE, WIS. AND STANHOPE, N. J.
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

THE INSULATED HOME IS COOL IN SUMMER—WARM IN WINTER

United States Mineral Wool

United States Wool is made by a process which converts the basic material, while in a molten condition, into a fibrous state. It is recommended for lining walls, floors, roofs and ceilings and for use wherever a continuous unbroken job of insulation is desired.

Advantages of United States Wool for House Insulation

(1) United States Wool builds up a very high resistance to the passage of heat, cold and sound through the sidewalls, roof and attic floor.

(2) In winter, United States Wool prevents the escape of heat through walls and ceilings of the home. It reduces fuel expense at least one-third.

(3) In summer, United States Wool repels outside heat, making the home many degrees cooler.

(4) United States Wool is widely used as a sound-deadener and will prevent, to a great degree, the transmission of sound from within or without the house. It is especially recommended for soundproofing the dividing walls and floors in apartments.

(5) In sidewalls, United States Wool prevents circulation of cold drafts, thus preventing heat loss through convection or circulation of air—board or blanket forms of insulation cannot prevent circulation of air in sidewalls.

(6) United States Wool is absolutely indestructible, verminproof, and fireproof. It forms an effective fire barrier.

(7) United States Wool is reasonable in cost and can be economically and efficiently installed by unskilled labor.

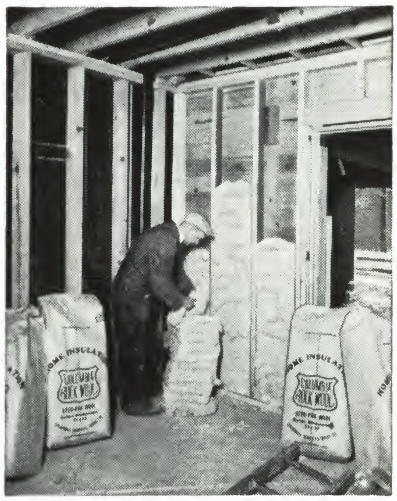
United States Stud-Pak Wool

An improved form of rock wool for hand packing of sidewalls, ceilings, roofs in new or old construction. Low in cost. Applied like a batt.

Stud-Pak Wool is delivered to the job in the form of a block 15 x 12 inches by 40 inches high. You simply peel wool from block in layers 3⅝ x 15 x 12 inches and place Wool Pak between studs or joists.

Stud-Pak Wool gives you the ease and speed of Batt Insulation plus the economy of loose wool.

The finished job is uniform in density, attractive in appearance, and low in labor cost.



Anyone can quickly and easily install Stud-Pak Wool. Simply peel off in layers and place wool between side wall studs. Low in cost—applied like a batt

We manufacture a complete line of Rock Wool insulation, including Loose, Granulated, and Bat types. For best results, loose and granulated wool should be packed to a density of 6 to 7 lb. per cubic foot.

OTHER INSULATING PRODUCTS

We manufacture an efficient High Temperature Cement of which slag wool is the chief ingredient. Recommended for all types of industrial equipment, boilers, pipes and similar purposes where a plastic insulation can be used and a continuous unbroken layer of insulation is desired. Further information on request.

We also furnish Rock Wool Blankets, with or without wire, for all high and low temperature requirements.

THE ZONOLITE COMPANY

General Offices DETROIT, MICHIGAN — **Mines, LIBBY, MONTANA**

INSULATION PRODUCTS

ZONOLITE
TRADE MARK REGISTERED

MANUFACTURING DISTRIBUTORS

California—Hill Bros. Chemical Co., 2159 Bay St., Los Angeles
Illinois—Mineral Conversion Co., 5850 Ogden Ave., Chicago
Michigan—Zonolite Corporation of Michigan, 5905 Second Blvd., Detroit
Minnesota—Western Mineral Products Co., 1720 Madison St., N. E., Minneapolis
Missouri—Zonolite Insulation Co., 5100 Manchester Ave., St. Louis
Montana—Zonolite Company, Libby
Nebraska—Western Mineral Products Co., 2602 Ed Creighton St., Omaha
New York—Munn & Steele, Inc., 130 Lister Ave., Newark, N. J.
Manitoba—Gypsum Lime & Alabastine, Canada Ltd., 504 Trust & Loan Bldg., Winnipeg
Ontario—Duplate Safety Glass Co., Canada Ltd., Oshawa
England—Honeywell & Stein Ltd., 21 St. James's Square, London S.W.I.

ZONOLITE LOOSE FILL INSULATION

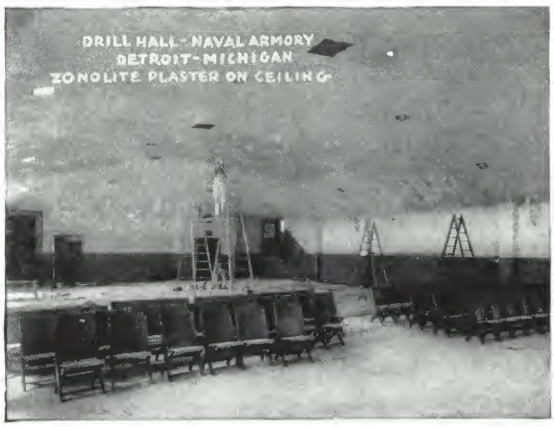
Zonolite is a lightweight, granular, fill type insulation made by heating Zonolite ore to a temperature of 1500°F. The Zonolite ore is a micaceous, non-metallic mineral having a laminated structure which expands at right angles to the plane of lamination during the heating process. The resulting product has a silvery or golden hue, a density of 5½ to 6 lbs. per cu. ft., is fireproof, rotproof, rodent and vermin proof, has a high dielectric strength, is non-toxic and chemically inert.

Zonolite is unsurpassed as an insulation against the transfer of heat through the walls and ceilings of residences and other buildings. It readily pours to a uniform density, flowing freely around plaster keys, electrical wiring and plumbing and heating pipes and fittings.

Zonolite is put up in bags of 4 cu. ft. capacity which gives the following approximate coverage per bag.

Depth of Fill	Coverage in Square Feet per Bag	
	No. Joists or Studs	Joists or Studs 16 in. on Centers
2 in.	24	26
3 in.	16	17½
3⅝ in.	13	14½
4 in.	12	13

Actual use shows that Zonolite does not absorb moisture from the air due to its granular form which provides air spaces between the granules as well as a multitude of small spaces within each granule.



ZONOLITE LIGHT WEIGHT INSULATING PLASTER

Zonolite Lightweight Insulating Plaster is made by mixing plaster-size Zonolite granules with ordinary gypsum plaster compound without the use of any sand. Zonolite Plaster has three times the insulating value of ordinary sanded plaster and is only one third as heavy.

Comparative tests made by Dr Paul H. Geiger at the University of Michigan show that Zonolite Plaster has an average coefficient of sound absorption which is 5½ times greater than ordinary plaster. Zonolite Acoustical Plaster should only be spray painted with water base paints.

Where Insulation Value is more important use Zonolite Plaster for the scratch and brown coat and finish with the regular white putty coat or sand finish as desired. Where Acoustical Value is more important use Zonolite Plaster for all three coats leaving a float finish to give the acoustical benefit.

Zonolite Plaster has much greater fire resistance than ordinary plaster and offers distinct advantages for "fire stops" and curtain walls in semi-combustible structures. It also offers opportunities to reduce the cost of construction of fire-proof structures by the proper combination of the insulating and fire resisting plaster with steel. Write for further details.

ZONOLITE LIGHT WEIGHT CONCRETE

Zonolite Lightweight Concrete is a mixture of Zonolite granules and Portland Cement which can be mixed on the job with ordinary concrete mixing equipment. Varying mixes are possible giving the desired strength and insulation value; the lighter densities having less strength but higher insulating values.

Tests conducted by F. B. Rowley of Minneapolis on Zonolite Concrete having a density of 24.8 lbs. per cu. ft. shows a thermal conductivity of .826.

Zonolite Concrete has been used with excellent results as a roof fill to provide roof saddles and insulation in one application, also for insulating floor and walls of cold storage rooms and for non-load-bearing walls.

Zonolite Concrete is also an exceptional product for insulating drying ovens, annealing ovens and furnaces. For temperatures below 800 to 1000 degrees ordinary Portland Cement is used while for higher temperatures special high temperature cements are used with the Zonolite to suit the conditions. Write for details regarding this.

OTHER ZONOLITE PRODUCTS

Write the nearest Zonolite Manufacturing Distributor for information and specifications on the use of Zonolite Products for insulating tanks, boilers, furnaces, ovens, ducts and cold storage rooms; for sound-proofing partitions, walls and ceilings; for high temperature cements, refractories and combustion chambers.

ATLAS SUPPLY COMPANY

Manufacturers of Adhesives, Pastes and Cements

4502 High Street
MANAYUNK, PHILADELPHIA, PA.

Atlas Adhesives have been used in every section of the country. We will be glad to refer you to customers or name jobs in any locality, on request.

PRODUCTS

AcouStick; Atlas Adhesive No. 16; Atlas Adhesive No. 75; Atlas Adhesive No. 20; Atlas Adhesive No. 39; Atlas PlaStick; Atlas Linoleum Paste; Atlas Waterproof Linoleum Cement; Atlas Waterproof Tile Cement.

ACOUSTICK

A plastic, waterproof cement for fastening all types of acoustical tile, hair felt, and similar acoustical materials to walls and ceilings. It is very easily applied and, because of its great initial power, materials cemented do not require shoring, nailing, or support of any kind.

It remains plastic and flexible indefinitely, thereby providing for reasonable expansion and contraction of the surfaces or of the material which is cemented to them.

Over twenty-seven million square feet of acoustical material has been fastened with AcouStick, in every part of the world.

Each gallon will fasten from 30 to 60 sq. ft. of tile, according to the weight of the tile and the evenness of the surfaces.

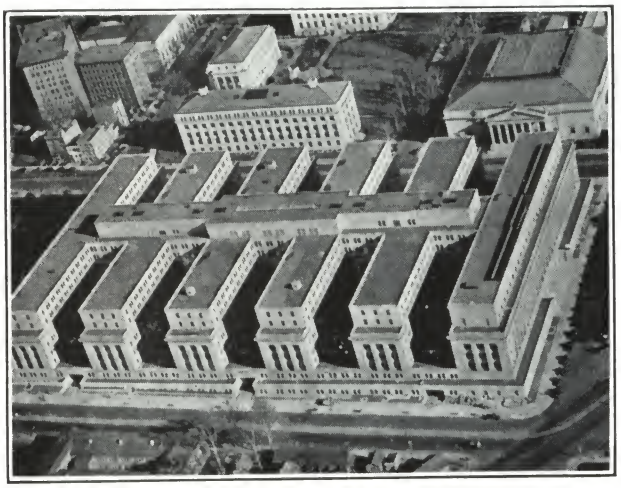
ATLAS ADHESIVE NO. 16

Adhesive No. 16, a plastic, waterproof cement for fastening cork, asbestos, hair felt, decorative glass, and every type of insulating material to all kinds of surfaces. Used extensively for fastening insulating material to metal ducts in air-conditioning work. The use of this adhesive eliminates shoring or wiring. It is used also for laminating cork and similar materials, and with many other materials, such as ceramic, marble, metal and other types of tile, on renovating jobs.

This adhesive is applied by the dab or spot method by placing dabs on about 8 to 10-in. centers, and then pressing the material to the surface to which it is to be fastened. The cement is sufficiently strong to hold the material immediately and permanently against the surface. Each gallon is sufficient for from 40 to 50 ft. of material.

ATLAS ADHESIVE NO. 75

Adhesive No. 75 is the same as No. 16, but sufficiently thinner to be easily spread over the entire surface of the material to be fastened. This process provides a completely water and air tight joint between the material and the surface to which it is fastened. Each gallon is sufficient for from 50 to 60 sq. ft. of material.



New Interior Building, Washington, D. C.
Five different Atlas adhesives were used in this building

ATLAS ADHESIVE NO. 20

This is the same as No. 16 and No. 75, but sufficiently thin to be spread on by the brush method. It is used for all types of light material, such as hair felt, cloth, asbestos paper, etc. One gallon of this is sufficient for from 80 to 120 sq. ft. of material.

ATLAS ADHESIVE NO. 39

No. 39 is a waterproof liquid cement for cork, felt pipe coverings, synthetic cork, and hair felt where these materials are used for sound-absorption and other purposes. It is a quick drying, very strong adhesive.

ATLAS PLASTICK (WALLBOARD CEMENT)

A plastic, waterproof adhesive for fastening wall tile, wallboard, and practically every type of wall-covering material. It is an adhesive with thousands of different uses. Sold by lumber and building supply firms throughout the United States.

ATLAS LINOLEUM PASTE

For fastening all kinds of linoleum, cork carpet, and sheet rubber to wood or concrete floors.

ATLAS WATERPROOF LINOLEUM CEMENT

For fastening linoleum and various types of floor tile to a wood, concrete or metal surface where a waterproof adhesive is required.

SPECIAL CEMENTS

We develop cements for special purposes, and shall be glad to receive inquiries regarding unusual conditions where an adhesive is required.

PACKAGE AND WEIGHT

All Atlas Adhesives are packed in cans of any desired size. The usual shipments are made in 1, 2, 3, and 5-gal. containers. The weight per gallon on all adhesives is approximately 12 lbs. to the gallon.

Literature and samples for any of these products will be furnished on request.

MEMORANDA

CELOTEX

REG. U.S. PAT. OFF.

BUILDING PRODUCTS

INSULATION PRODUCTS *Section*

« *See* ACOUSTICAL *and* ROOFING *Sections* »

THE CELOTEX CORPORATION

• 919 • NORTH • MICHIGAN • AVENUE • CHICAGO • ILLINOIS •

PLANTS LOCATED AT MARRERO, LA.; METUCHEN, N. J.; CHEWELAH, WASH.; MARIETTA, OHIO

CELOTEX

REG. U. S. PAT. OFF.

The above is the registered trade mark of The Celotex Corporation identifying the products to which the mark is applied as its products.

C-X

REG. U. S. PAT. OFF.

TEXBORD

TRADE MARK

CEMESTO

REG. U. S. PAT. OFF.

PROTECTION

TRADE MARK

TRAFFIC

TRADE MARK

The above trade marks are secondary trade marks applied to products manufactured by The Celotex Corporation to identify specific products as those of The Celotex Corportation.

THERMAX

REG. U. S. PAT. OFF.

FLEXCELL

REG. U. S. PAT. OFF.

The above registered trade marks are trade marks applied to products sold by The Celotex Corporation to identify such products as those of the respective manufacturers thereof.

The various trade marks shown are used in the following pages in identifying the various products as those manufactured or sold by The Celotex Corporation.

For full descriptive designation of the various products to which the several trade marks apply, see the tabulation pages 4 and 5 under the heading "Description".

See Back Cover for List of Branch Sales Offices

PRODUCTS

CELOTEX CANE FIBER INSULATING MATERIALS—In a choice of sizes and shapes—from boards 4x12 feet in area and planks 6 in. wide by 12 feet in length to small unit tiles—Celotex Cane Fiber Insulating Materials are made for both structural and decorative uses. Applications of these rigid, insulating cane fiber products range from boards used as sheathing to lath units, to colored, textured self-finishes of various standard shapes and dimensions for interior wall treatment.

GUARANTEE—Celotex Cane Fiber Insulation products are backed by an all-inclusive 10-point, Life-of-the-Building Guarantee:

1. To maintain insulating efficiency for the life of the building.
2. To provide structural strength.
3. To give lasting fuel economy.
4. Against destruction by termites.
5. Against destruction by dry rot.
6. To be water repellent.
7. To reduce noise.
8. Not to settle away from the framework.
9. Against loss of insulation efficiency upon painting or plastering.
10. To meet Department of Commerce commercial standards CS42-32 and U. S. Federal specifications LLL-F321a.

The products embraced in this guarantee are: Building Board, Lath, Vapor-seal Sheathing, Vapor-seal Lath, Finish Plank, and Tile Board when applied in accordance with Celotex Specifications. The Celotex Life-of-the-Building Guarantee applies only within the boundaries of continental United States.

HARD BOARD PRODUCTS—For wall surfaces subject to unusual wear and tear, abrasion or bodily contact, Celotex offers a series of stiff and tough, non-insulating hard boards. Some surfaces are smooth; others are textured; one is stamped to simulate tile. The hard boards are highly resistant to moisture and warping and are adaptable to such varied uses as wainscoting, paneling, counter tops, furniture, form boards, etc. Colors range from natural wood tones to black or green. Several are suitable for painting or enameling.

CELOTEX TRAFFIC TOP PRODUCTS—Traffic Top is extremely wear-resistant cane fiber insulation board, impregnated with selected bitumens by a special process. There are two standard types — **Celotex Traffic Top** (See Roofing Catalog) and **Celotex Mil-flor.**

Celotex Traffic Top, available in black, green, or red, is designed for use as a surfacing over built-up roofing, play courts, ramps, terraces, and other similar surfaces subject to foot traffic. Mil-flor's chief use is for medium duty traffic surface for factory floors. Not recommended where subject to excesses of oil or in heavy industry plants subjected to severe abuses from abrasion by heavy machinery parts or heavy factory trucks with narrow steel wheels.

CELOTEX PROTECTION BOARD—This cane fiber board is impregnated with bitumens to provide a tough, resilient, moisture resistant board. In the construction of foundations, bridges, tunnels, reservoirs, and floors, it is used as a protection for the waterproofing and dampproofing membrane. In hotels, schools, churches, offices, apartments, and homes it is applied direct to the sub-floor to provide cushioning and sound deadening under foot traffic and protection to the wood block flooring where moisture conditions prevail.

FLEXCELL EXPANSION JOINT—Wherever expansion joints are required in concrete work, Flexcell Expansion Joint, a product made of asphalt-impregnated Celotex Cane Fiber Board, has outstanding advantages. Under compression, it will not extrude. Resilient; easily cut with hand or power saw. Neat finished joint requires no trimming. Durable.

CEMESTO—Celotex Cane Fiber Insulation Board, ½ to 4 inches thick in sizes up to 4x12 feet, surfaced one or both sides with a coating of cement-asbestos. Cemesto is moisture and fire resistant. This board is especially desirable for industrial processing rooms or as an exterior finish. Its hard surface and exceptional rigidity and strength suggests its excellent use for partition work in wood frame and steel construction.

THERMAX—This fire-resisting structural insulation, made of cement-coated tough wood shreds, is the only structural insulation board or slab to enjoy the Underwriters' Laboratories classification as incombustible. In standard 20 inch width, Thermax is made in lengths up to 108 inches and in 1, 2, or 3 inch thicknesses. High in insulation value, it is adaptable as sheathing, roof boarding, plaster base, partition and furring slabs, light weight floor slabs, ceiling slabs, insulation over roof decks, and insulating structural roof slabs.

ACOUSTICAL MATERIALS—Celotex manufactures and distributes a complete line of acoustical materials of varied unit shapes and sizes, in surface finishes adaptable to almost any architectural treatment. For complete description and specific data on these products, see file index for acoustical catalog or write The Celotex Corporation.

See Pages 4 and 5 for Products Index

TABLE OF PRODUCTS AND RECOMMENDED USES

THERMAL INSULATING PRODUCTS

PRODUCT	SIZES (Feet, Unless Otherwise Indicated)	THICKNESS	DESCRIPTION	MAJOR USES
CELOTEX BUILDING BOARD Pages 12, 14, 15, 17, 18	4 x 4, 4 x 5, 4 x 6, 4 x 7, 4 x 8, 4 x 8½, 4 x 9, 4 x 9½, 4 x 10, 4 x 12 Also available on special order in 6 and 8 ft. widths in ½" thickness	½", 1" Standard. ¾", 1½" and 2" on special order.	Each board has two distinct surface textures; one side with sanded finish, the other side with a tapestry texture. (No. 53 finish.) Neutral tan color. Also furnished on special order in finishes Nos. 55, 75 and 83 with one surface suitable for interior finish. (See description of finishes in Table 1, Page 6.) All edges square. Ferox treated. (6 ft. and 8 ft. widths only in textured or No. 83 finish.)	Structural insulation used as exterior finish; as wall sheathing under brick veneer, siding, wood shingles or stucco; as roof sheathing on pitched roofs under various types of roofing; interior finish; base for plastic paints, wall coverings and other interior decorative finishes. May also be grooved, beveled, etc.
CELOTEX VAPOR-SEAL INSULATING SHEATHING Pages 9, 12, 14	4 x 7, 4 x 8, 4 x 8½, 4 x 9, 4 x 9½, 4 x 10, 4 x 12	25/32"	A waterproofed, vaporproofed insulating sheathing; edges square; all sides and edges coated with asphalt; one side finished with aluminum compound over asphalt. Ferox treated.	Structural insulation used as wall sheathing under brick veneer, siding, shingles or stucco; also as roof sheathing on pitched roofs under various types of roofing.
CELOTEX VAPOR-SEAL INSULATING LATH Pages 9, 16	18" x 48"	½" and 1"	A patented insulating plaster base plus vapor seal. On ½" lath, vapor barrier is asphalt and aluminum coating on back of lath—on 1" lath, vapor barrier is in middle of lath, ½" from each surface. Long edges shiplapped and beveled; extra rigidity; all lath branded.	Continuous plaster base for exterior walls and top story ceilings in cold climates; where high humidities prevail, and where air conditioning is contemplated.
CELOTEX INSULATING LATH Pages 9, 16	18" x 48"	½", ¾", 1" (Vapor-Seal Insulating Lath in ½" and 1" only)	A patented insulating plaster base. Long edges shiplapped; all edges beveled to reinforce plaster against cracking and to eliminate unsightly lath marks; not sanded; extra rigid; all Lath branded. Ferox treated.	Continuous insulating plaster base for walls, partitions and ceilings.
CELOTEX FINISH PLANK Pages 6, 9, 20, 22	Widths: 6", 8", 10", 12", 16". Lengths: Standard 8', 9', 10' and 12'.	½" Standard 1" on special order.	Ferox treated cane fiber board with long edges beveled and beaded. Type Double A, reversible beveled, interlocking joint in ½" thickness. (See Table 2, Page 6.) Finishes: Nos. 53, 55, 75 and 83 as in Table 1.	Decorative wall and ceiling finish. Provides efficient insulation. (Frequently used in combination with other Celotex interior finish products.)
CELOTEX TILE BOARD Pages 6, 9, 21	12" x 12", 12" x 24", 16" x 16", 16" x 32", 18" x 48", 24" x 24" 24" x 48"	Type Double A reversible, beveled joint in ½" thickness only. 1" Tile furnished only in Types A, B, C or D Joints and on special order only.	Ferox treated cane fiber board in Tile-Sized units with beveled edges. Type Double A reversible bevel joints in ½" thickness only. Also with other joints in ½" and 1" thicknesses on special order. (See Table 2, Page 6.) Finishes Nos. 53, 55, 75 and 83 as in Table 1.	Decorative wall and ceiling finish. Provides efficient insulation.
CELOTEX KEY JOINT UNITS Pages 10, 11	16" x 16", 16" x 42", 16" x 96", 48" x 48", 48" x 96" (Sizes on modules of 16")	3/4 (Standard plaster ground thickness)	Five standard units in No. 83 Celotex Ivory Color dimensioned on 16" modules for direct attachment to studs and joists spaced 16 in. o.c. All four edges are grooved and furnished with Celotex splines and finished with a specially detailed profile on exposed face.	For insulating, decorative interior wall and ceiling treatment.
CELOTEX ROOF INSULATION Page 27	22" x 47"	½", 1", 1½", 2" and multiples thereof up to 4" (8-ply).	Ferox treated Celotex cane fiber insulation board. Square edges; also furnished shiplapped and stapled on special order, 1" or more thick.	For roof insulation under built-up roofing on flat roofs; under certain types of roofing on pitched roofs, and as a protection course for membrane waterproofing.
CELOTEX VAPOR-PROOFED LOW TEMPERATURE INSULATION (VLTI) Page 29	18" x 36" Also available on order 18" x 18", 9" x 36" and 12" x 36".	1", 1½", 2", 2½", 3", 3½" and 4"	Low density, Ferox treated Celotex. Edges dipped in asphalt and insulation blocks completely incased in waterproofing, vaporproofing membrane. Edges square. Conductivity, 0.30 Btu per inch.	Used as cold storage insulation and for general low temperature insulation. Also for severe moisture conditions, as in humidified residences. Do not use where temperature exceeds 100° F.
CELOTEX CEMESTO Pages 31, 32, 33	4 x 4, 4 x 6, 4 x 8, 4 x 10, 4 x 12	Celotex: ½", 1", 1½", 2", 3" and 4". Cement-asbestos surfaces each 1/8" thick (S1S or S2S)	A fabricated, fire and moisture resistant, insulating wall unit of Ferox-treated Celotex Cane Fiber Board surfaced on one or both sides with cement-asbestos.	Integral finished interior and exterior wall or interior partition wall. Dry kilns, air-conditioned rooms, air ducts, factory partitions, etc.
THERMAX Pages 34 to 53	20" wide by 32", 48", 64"; 72", and 96" long. Special lengths up to 9 ft. on request.	1", 2" and 3"	Long, tough wood shreds completely coated with fire-resisting cement. Conductivity, 0.458 per inch.	Structural heat and sound insulation. Adapted to fireproof construction.
C-X ROCK WOOL	Batts, 15" x 23" Paper Backed, 15" x 23" and 15" x 48" Pads, 9" x 15" Prepacked, 9" x 15" Also furnished in granular and loose form in bags.	Batts, 3 5/8". (Approx. wall thick) and 2".	Made from carefully selected natural rock, melted in a furnace and blown into hair-like fibers by highpressure steam. Fibers chemically treated during manufacture to make water repellent. Has low conductivity and is incombustible, fireproof, vermin-proof, rodent-proof. Furnished in batt form for fitting between wood framing members, Paper Backed Sealed on inside with nailing flange on long edges, Prepacked for ease of handling; also granular for pouring into enclosed spaces and loose for packing into open spaces.	For insulation and fire-retarding purposes between studs, joists or rafters.

CELOTEX HARD BOARD AND OTHER PRODUCTS

CELOTEX HARD BOARD Page 27	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	1/8" & 3/16", all sizes except 12 ft. 1/10", 1/4" & 5/16" in 12 ft. lengths only.	A rigid, tough, grainless and moisture-resisting fiber board. One surface is smooth—the other has a canvas-like texture. May be painted or lacquered.	Generally used for outdoor signs (painted), truck bodies, furniture and counter tops.
CELOTEX TEMPERED HARD BOARD Page 27	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10, and 4 x 12 ft.	1/8" & 3/16", all sizes except 12 ft. 1/10", 1/4" & 5/16" in 12 ft. lengths only.	Similar to Celotex Hard Board, except specially treated against moisture by a tempering process. One surface is smooth, the other has a canvas-like texture.	Recommended for concrete form work and other uses exposing the board to weather or moisture. Meets the accepted standards of density, strength and durability.
CELOTEX BLACK OR GREEN TEMPERED HARD BOARD Page 27	4 x 12 ft.	1/10", 1/8", 3/16", 1/4" and 5/16"	Similar to Celotex Tempered Hard Board—rigid, tough, grainless and waterproof. Has a smooth, mottled black or green finish on one side, and a light brown canvas-like texture on the other side.	Used for table tops, counter tops, shelving and other furniture specialties. Also used as a wall finish in combination with regular Celotex Tempered Hard Board.
CELOTEX HARD BOARD TILE, TEMPERED Page 27	4 x 12 ft.	1/8" and 3/16"	Celotex Hard Board Tile is a tough, tempered hard board with impressions stamped into a tile-like pattern of 4-inch squares. Readily takes enamel or lacquer.	Particularly adapted for wainscoting in restaurants, bathrooms, kitchens, taverns wherever a smooth tile-like finish is desired.
CELOTEX TEMPERED CONCRETE FORM BOARD Page 27	4 x 12 ft.	3/16", 1/4", 5/16"	A rigid, tough, grainless tempered fiber board of unusual strength and durability. Easy to handle, nail and saw.	For concrete structural foundations and walls. Makes possible high grade smooth finish concrete exteriors and interiors.
CELOTEX PANEL BOARD Page 27	4 x 2, 4 x 3, 4 x 4, 4 x 6, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	¼"	A fiber board of superior strength and moisture-resistance. One surface smooth and polished—the other a canvas-like texture. Easily cut, worked and decorated.	Generally used for interior paneling without decorating. Can be painted or lacquered. Also used for drawer bottoms and dresser backs.
CELOTEX STUDIO BOARD Page 27	4 x 2, 4 x 3, 4 x 4, 4 x 5, 4 x 6, 4 x 7, 4 x 8, 4 x 9, 4 x 10 and 4 x 12 ft.	¼"	This is a lighter weight and tough grainless fiber board having one smooth surface of mottled light brown. The other surface has a burlap-like texture.	Generally used for interior paneling without decorating. Can be painted or lacquered. Also used for drawer bottoms and dresser backs.
CELOTEX TEXBORD Pages 24, 25, 26, 27	Lengths—8 and 10 feet Widths, 6", 9" and 12"	¼"	A genuine fine cabinet wood veneer firmly laminated to a Celotex Cane Fiber base. Each unit is an individual plank. Edges beveled. Furnished in walnut, mahogany, avodire. Oil-waxed to a soft lustre—ready for application.	Interior wall and ceiling finish.
CELOTEX TEXBORD MOULDINGS	No. 1—5/8" x 7/8" No. 2—7/16" x 2-1/4"	7/16"	Two types of solid wood mouldings in mahogany, walnut, and avodire, oil-waxed to a soft lustre.	Used separately or combined to give a light or heavy treatment necessary to fit any design.
CELOTEX MOULDINGS Page 19	According to design	According to design	Mouldings made from Celotex Cane Fiber Board; Friezes made from Celotex Panel Board.	Wall and ceiling decorative elements for interior cornices, panels, etc.
CELOTEX ORNAMENTS Page 20	12" x 12", 16" x 16" 22" round	½"	Made from Celotex Cane Fiber Board.	Wall and ceiling decorative elements.
CELOTEX BATTEN STRIPS Page 20	According to design	½"	Made from Celotex Cane Fiber Board. Beveled is standard; beveled and grooved furnished on special order.	Wall and ceiling panels.
CELOTEX PROTECTION BOARD Page 28	24½" x 49"	¼" & ½"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. Unpainted. Square edges only.	Cushioning under wood block flooring; protection of waterproofing courses, and other general purposes.
CELOTEX TRAFFIC TOP See Roofing Catalog	12" x 24", 24" x 48"	¼" & ½"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. Colors: black, green and red. Edges beveled. Surface waxed.	Promenade surface on roofs, play courts, aisleways or other surfaces subjected to foot traffic and exposed to the outside weather.
CELOTEX MIL-FLOR Page 29	24" x 48"	¼" & ½"	Ferox-treated Celotex cane fiber insulation board impregnated with selected bitumens by a special process. Has greater density and less resilience than Promenade Traffic Top. Primed, unpainted with beveled edges.	Exceptionally adapted for medium duty traffic surface for factory floors, but is not recommended where floors are subjected to excesses of oil or in heavy industry plants subjected to severe abuses from abrasion.
FLEXCELL EXPANSION JOINT—Page 30	3 x 10 ft. sheets and cut to size strips.	¼", 3/8", ½", ¾", 1"	Made of Celotex Cane Fiber Board, impregnated by a patented process with a durable, protective asphalt.	For concrete expansion joints.

1. Celotex Vapor-seal Insulating Sheathing (Asphalt Coating Exposed)
2. Celotex Vapor-seal Insulating Sheathing (Aluminum Coating Exposed)
3. Celotex Insulating Building Board
4. Celotex Insulating Tile Board Ceiling
5. Celotex Insulating Finish Plank
6. Celotex Mouldings
7. Celotex Insulating Lath
8. Celotex Protection Course
9. Shingles
10. Wood Siding
11. Brick Veneer
12. Plaster
13. Wood Flooring
14. Wallpaper

TABLE NO. 1.—COLORS AND FINISHES

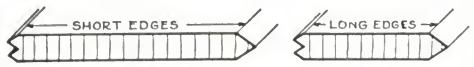
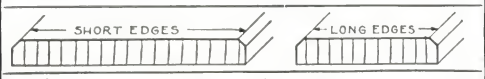
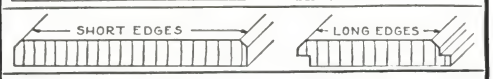
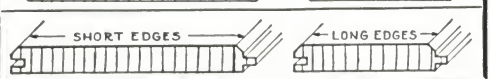
NO. OF FINISH	TOP FACE	REVERSE FACE
53	Natural Color, Sanded	Natural Color, Tapestry Texture
55	Natural Color, Rippled and Sanded	Natural Color, Tapestry Texture
75	Light Brown Color, Rippled and Sanded	Natural Color, Tapestry Texture
83	Deep Ivory Color, Smooth Finish	Natural Color, Sanded

NOTE: *Celotex Building Board is Furnished in all colors except No. 60 on special request. Only one surface suitable for interior finish. Celotex Finish Plank is furnished in all Finishes. Celotex Tile Board is available in all but No. 60 Finish.*

MOULDINGS

Celotex mouldings (shown in color on page 19) are the ideal complement to walls and ceilings of Celotex. They are used for cornice decoration, batten strips to cover nail heads and joints, or to carry out the architectural design. Celotex ornaments for corner or center treatments or for borders are shown in color on page 20.

TABLE NO. 2.—TYPES OF CELOTEX JOINTS—Tile Board and Plank

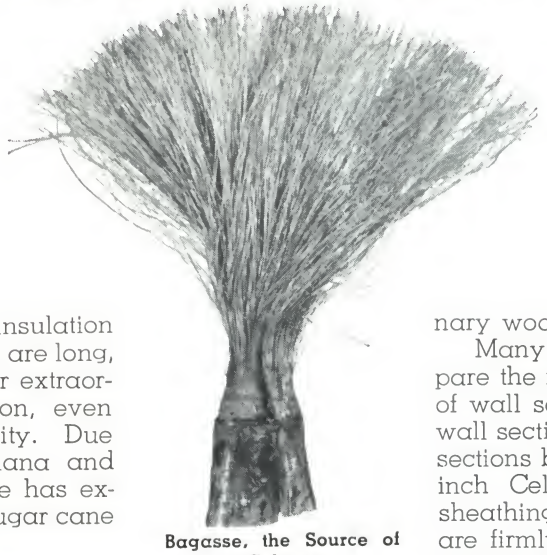
TYPE OF JOINT	DESCRIPTION	DETAIL
Double A*	All edges, both top face and reverse face, beveled, interlocking joint. All Tile and Plank with this joint are reversible so that sanded surfaces and textured surfaces may be alternated in pattern. Suitable in Tile for Square, Diamond, Ashlar and Basket Weave patterns. (For Herringbone specify one-half each left and right joints.)	
A†	All edges of one face beveled, butt joint. Suitable for all tile patterns.	
B†	All edges of one face beveled, long edge ship-lapped. Suitable for Square, Diamond and Ashlar patterns. (Not Basket Weave or Herringbone.)	
C†	Diagonal bevel joint, all edges of one face beveled. Suitable for Square, Diamond, Ashlar and Basket Weave patterns. (Not Herringbone.)	
D†	Tongue and groove joint, all edges of one face beveled. Suitable for Square, Diamond, Ashlar and Basket Weave patterns. (Not Herringbone).	

**Standard joint for Tile and Plank; furnished on ½-inch board only. Joint details may be obtained on long edges only of Celotex Building Board on special order.*

†Furnished only on special order.

PROPERTIES OF CELOTEX

Celotex Structural Insulation is a rigid cane fiber product made from bagasse—the tough vegetable fiber of sugar cane, after the sugar has been extracted. When properly applied it combines insulating effectiveness with bracing and stiffening strength. The fiber, practically limitless in supply, is the ideal basic material for insulation board in that the individual fibers are long, tough, strong, and resilient. Their extraordinary resistance to deterioration, even when untreated, insures durability. Due to climatic conditions in Louisiana and processing methods, the bagasse has exceptional qualities not found in sugar cane fiber produced elsewhere.



Bagasse, the Source of Celotex

MANUFACTURING PROCESS—The cane fibers are first cooked and repeatedly washed. The cooking dissolves all sugar and other soluble matter and the washings remove it. The clean fibers are then chemically treated (waterproofed) so that the entire board throughout its thickness is highly water resistant.

Next the fibers are treated against dry rot and termites by the patented Ferox process (see page 8). While still wet they are then firmly felted, or interwoven, (without the addition of adhesives) and fabricated into continuous boards 12 feet wide and more than 1,000 feet long. The wet board passes through driers heated to 350° F. or more, which not only dry the board but result in a sterile product.

Celotex manufacture is under precise control at all times. The physical properties established for each product become production standards and are constantly maintained. Each of the different forms of Celotex has its own individual characteristics. Comparison with data relating to other materials should, therefore, be made only when the materials studied are intended for the same use and the tests have been made under similar laboratory conditions.

SIZES—Sizes and thicknesses of the various Celotex products including their major application uses are given in the tables on pages 4 and 5.

THERMAL CONDUCTIVITY—The insulating value of Celotex has been established by many nationally known laboratories (U. S. Bureau of Standards, Armour Institute of Technology, and others). Tests show the average thermal conductivity to be 0.33 B.t.u. per hr., per sq. ft., per deg. F., per in. thickness. This value applies to Celotex Building Board, Vapor-seal Insulating Sheathing, Lath, Finish Plank, Tile Board, and Roof Insulation. The thermal conductivity of Celotex Vaporproofed Low Temperature Insulation (VLTI) is 0.30 B.t.u. per hour, per sq. ft., per deg. F., per in. thickness.

STRUCTURAL STRENGTH—It is important to differentiate between the strength of a material itself, its tensile or compressive strength, and its strength when installed for some particular use. Lumber parallel to the grain, for example, has greater tensile strength than Celotex, but a Celotex-sheathed wall possesses bracing and stiffening properties far in excess of a wall sheathed with wood applied horizontally (see the table below). It equals and often exceeds the strength of ordinary wood sheathing applied diagonally.

Many tests have been made to compare the rigidity or resistance to distortion of wall sections sheathed with wood and wall sections sheathed with Celotex. Wall sections built of standard studding and ½ inch Celotex, and studding and wood sheathing, usually 8 feet by 12 feet in size, are firmly bolted on the lower edge and pulled on the upper edge to distort them.

The magnitude of the distortion at a pull of 1,600 pounds is as follows:

Tests made by or at	Thrust, pounds	Distortion in inches	
		Celotex-sheathed partition	Wood-sheathed partition
R. W. Hunt Co.	1,600	0.04	5.54
Univ. of Minn.	1,600	0.31	4.10
Colum. Univ.	1,600	0.30	5.02

It will be seen that under a pull of 1,600 pounds, which is near the maximum for wood sheathing, the Celotex wall sections distorted less than one-tenth as much as the wood-sheathed walls.

Lateral resistance tests at Columbia University on wall sections sheathed with Vapor-seal Insulating Sheathing ($\frac{25}{32}$ inch thick) show a distortion of 0.11 inch at a pull of 1680 pounds. These tests reveal that a wall sheathed with Vapor-seal is vastly superior from the structural standpoint to a wall sheathed horizontally with lumber.

COMPRESSIVE STRENGTH—There are two conditions of compressive strength involved in actual practice:

1. The per cent reduction in thickness under load.
2. The per cent reduction in thickness after removing load.

The following table shows the reduction in thickness of Celotex under various load intensities, and the "come-back" upon removing the load. The tests were made by Robert W. Hunt & Company.

Pressure lbs. per sq. in.	Percent reduction in thickness under load	Percent reduction in thickness after removing load
5	1.14	0.62
10	2.44	1.09
20	4.30	1.76
40	8.86	3.16
100	19.22	7.82

TENSILE STRENGTH—The minimum tensile strength of Celotex Building Board, Celotex Vapor-seal Lath or Celotex Vapor-seal Insulating Sheathing, based on The Celotex Corporation Product Specifications, is sufficient to meet all building construction requirements. Tests show that the average tensile strength is substantially higher.

PLASTER BONDING STRENGTH—Laboratory tests show that a direct perpendicular pull of 700 to 1,160 pounds per square foot is required to break plaster loose from Celotex. As the plaster load of a ceiling equals only about 5 pounds per square foot, the use of Celotex Lath as a plaster base provides a factor of safety of about 150. This is greatly in excess of the strength of bond of plaster to wood lath.

NAILING STRENGTH—When standard 1½ inch galvanized roofing nails are spaced 3 inches apart and ⅜ inch away from the edge (recommended Standard Practice) a Celotex joint will sustain a pull of 750 pounds per foot of joint before the board pulls away from the nail. This is based on ½ inch Celotex Building Board. Greater pulls would be sustained by greater thicknesses of Celotex.

MOISTURE RESISTANCE—All Celotex cane fiber products are thoroughly waterproofed during manufacture by means of a chemical treatment. It should be understood, however that Celotex is not recommended where it will come in direct contact with a hydrostatic head without the additional protection of a bituminous waterproofing course, consisting of alternate layers of saturated roofing felt and asphalt or pitch.

EXPANSION AND CONTRACTION—The linear expansion and contraction of Celotex cane fiber products due to temperature changes is practically nil. The linear expansion of Celotex as the result of moisture changes is only 15/100 of one per cent for a change from 35 per cent to 70 per cent in the relative humidity.

FEROX PROCESS—The Ferox process (patented), used in the manufacture of all Celotex cane fiber products, is a method whereby the individual fibers, in their wet state and before formation into a board, are coated with a chemical complex which is toxic to fungi, termites and other cellulose destroying organisms. This chemical complex in no way alters the physical properties or utility of the finished products. The Ferox-processed Celotex product presents no hazards to humans or domestic animals.

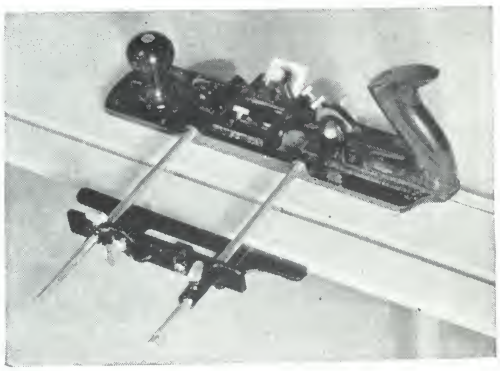
TERMITES—The Ferox process was originally developed for Celotex cane fiber products sold in tropical countries where it was found necessary to have Celotex products positively protected against termite attack, even when in storage or transit. Laboratory tests on the resistance of Ferox treated products to termites have been amplified by hundreds of field tests under actual working conditions in the tropics with completely satisfactory results. There have been instances where the untreated crating lumber of the Ferox shipment was devoured by termites while no evidence of the attack on the Celotex product itself was observed. Since the latter part of 1931, all Celotex cane fiber products have been made under the Ferox process.

DRY ROT—Ferox-processed Celotex is highly resistant to the attack of dry rot fungi. These fungi require warmth and moisture for their development. Those parts of buildings, therefore, where moisture collects and cannot readily evaporate are particularly subject to decay—roof sheathing, roof insulation, and in textile mills and other buildings in which high humidities exist. The great advantages of a material for these and similar uses that resists both termites and dry rot are obvious.

RODENT AND VERMIN RESISTANCE—Celotex contains no food for squirrels, rats, mice or other rodents or vermin. Rodents will only attack it when food or water on the opposite side attracts them, in which case they may gnaw a hole through Celotex as they would through plaster, wood or even concrete. When this occurs it will be noted that the fibers are left lying at the hole and are not eaten.

FIRE RETARDANT—The proper use of Celotex products in wood frame buildings adds to their fire safety. Celotex does not flame readily like wood, because it contains no pitch or resins. Its heat insulating value retards the spread of fire and tends to confine fire to the space in which it originates. It is used normally in large sheets and thus presents few cracks or open joints through which flame can pass and ignite the edges of the material or to reach more combustible material beyond. Celotex weighs only a third to a quarter as much as wood and generates correspondingly less heat.

DURABILITY — The life-of-the-building permanency which Celotex cane products possess is the product of four factors: (1) the natural decay resistance of cellulose fiber; (2) elimination of dry rot and other fungus attacks by the Ferox process; (3) freedom from destruction by Termites which starve when the organisms destroyed by the Ferox process are not present in their food, and (4) the water-repellency of the treated fibers. The two chemical treatments to which Celotex cane fibers are subjected during manufacture have greatly extended their natural longevity and have made practicable the Celotex guarantee for the life-of-the-building.



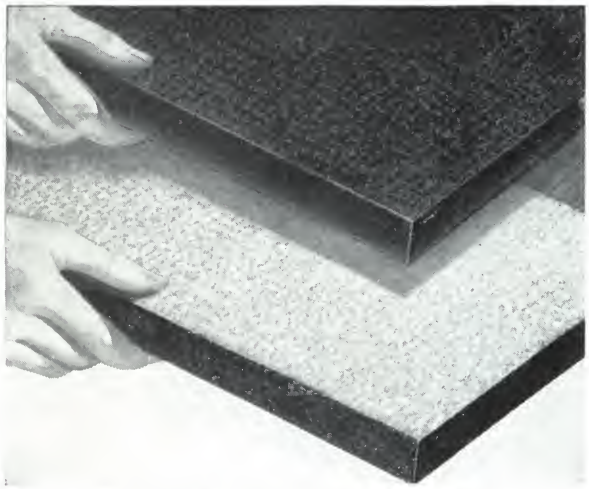
The Stanley Grooving Plane

WORKABILITY—Celotex is easily cut, carved, grooved and otherwise worked with ordinary woodworking tools with keen cutting edges. Special cutting knives and grooving planes have been developed by the Stanley Company and other tool makers for beveling, grooving and cutting Celotex to leave clean, smooth surfaces. Celotex may be sanded, stained, painted, lacquered, nailed and glued or cemented, making it one of the most facile materials used in building construction.

SUPPLEMENTARY INFORMATION

CELOTEX VAPOR-SEAL INSULATING SHEATHING

Celotex Vapor-seal Insulating Sheathing is designed to be used as a wall sheathing in frame construction in combination with various types of exterior finish such as brick veneer, wood siding, wood shingles or stucco, applied in accordance with Specification No. 1. Building paper is not required where Vapor-seal Insulating Sheathing is used on walls except under stucco. Also recommended as roof boarding on pitched roofs with wood stripping or solid wood sheathing, applied in accordance with Specification No. 2.



VAPOR-SEAL INSULATING SHEATHING
All Edges and Sides Coated With Asphalt—One Side Finished With Aluminum Compound Over Asphalt

patented Ferox process, and in addition is given a weatherproofing surface treatment—both sides and all edges are thoroughly sealed by means of a coating of asphalt. One surface of the board is also finished with an aluminum compound. See details on Page 13 for recommended uses.

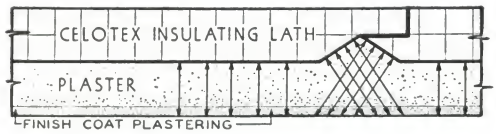
The application of the asphalt coating to all sides and edges of Celotex Vapor-seal Insulating Sheathing materially increases the inherent Celotex rigidity. It provides greater bracing strength than conventional lumber construction, and is impervious to air leakage under all conditions for which it is recommended in building construction.

Celotex Vapor-seal Insulating Sheathing is integrally waterproofed and treated against dry rot by the

CELOTEX INSULATING LATH

Celotex Insulating Lath is a patented insulating plaster base. The beveled edges and shiplapped joints provide greater plaster reinforcement at the joints where needed. The continuous unbroken surface eliminates lath marks and minimizes plaster cracking.

For use on exterior walls and top story ceilings, in the presence of high humidity or in cold climates where air conditioning or humidifiers are used, Celotex Vapor-seal Insulating Lath is recommended. The back of ½ inch lath is coated with asphalt and aluminum as a vapor barrier—



on 1 inch lath the barrier is in the middle, ½ inch from each surface.

Plaster adheres permanently to Celotex Insulating Lath due to mechanical and suction bond.

The plaster bonding strength of Celotex Insulating Lath is approximately 150 times the actual requirement. The lath may be bent around curves—insulating every inch of wall and ceiling area.

Neither the vapor seal nor plaster impairs the insulation value of Celotex. Its application is covered by Specification No. 4.

INTERIOR FINISH PRODUCTS

Celotex is preferred for interior decoration because of its versatility. The natural color, a neutral gray-tan, is an ideal background. In addition, it is furnished in several well chosen tints. It may, however, be economically painted and decorated.

Celotex Building Board, ½-inch and 1-inch thick, 4 feet wide and 4 to 12 feet long, is well suited to wall and ceiling treatment. By beveling and grooving, or through the use of mouldings of Celotex or other materials, various effects can be produced. Celotex Tile Board—small square and rectangular units—are used to create innumerable conventional patterns. Celotex Finish Plank—long narrow units—strikes a new note in wall treatment. Celotex Key Joint Units described on pages 10 and 11, ¾-in. thick in 5 sizes, add a new practical line of insulating decorative wall and ceiling units. Celotex ornaments and friezes add a final touch of beauty to Celotex interiors.

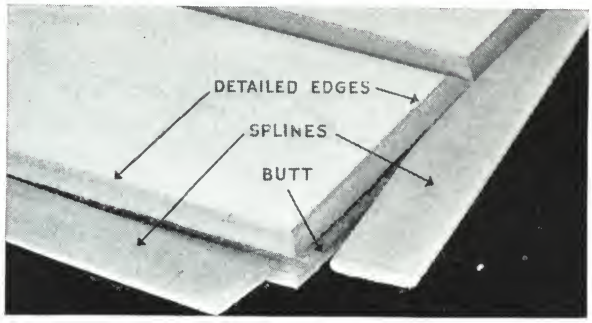
For application see Specifications Nos. 6, 7, and 8. For decorating with plastic paint, stain, paint, or paper, follow Specification No. 5 and data, page 23.

CELOTEX TEXBORD—Wood panelling in fine cabinet woods has always been regarded as one of the most attractive wall decorations. Celotex Texbord consists of a ¼-inch Celotex base finished with a genuine fine cabinet wood veneer. Each unit is an individual plank having a different grain from that of any other plank. Edges of the boards are so beveled that the installation appears to be of thick solid boards.

Texbord has made available a genuine wood veneer surface which can be installed at a low cost. This product is oil-waxed to a soft lustre and is available in walnut, mahogany and avodire. Methods of application are given in Specification No. 9.

Special solid wood mouldings for use in conjunction with Texbord in walnut, mahogany, and avodire are available for cornices, chair rails, etc. They are oil-waxed and may be used separately or combined to form heavy or light moulding effects.

CELOTEX KEY JOINT UNITS



Beauty is the first thought of the interior decorator—charm in color, texture, pattern and lines. Wearing quality—the second—the ability to withstand abrasion, avoid cracking, maintain color. Redecorating advantage is third—cleanability, paintability.

To meet these requirements the new Celotex Key Joint Unit was created. There has long been a need for such an insulating interior finish which applies direct to the studs without further preparation, and one that fulfills these major requirements.

The spline joint detail and ¾ in. thick Celotex makes it possible. Both edges and ends of each unit are prepared for the spline, facilitating side and end matching. The width of the butt concealed by the spline assures uniform spacing of an open joint. Celotex splines are furnished with the units.

This feature also provides inconspicious nailing—hiding the nail heads in the depth and shadow of the joint, where they get a good grip on the material and a firm hold on the framing.

Key Joint Units completely eliminate the possibility of unsightly open joints between wall units which have been bothersome under previous methods of construction.

The new Celotex Key Joint Unit is three-quarters of an inch thick—the same thickness as standard wall finish material in ordinary construction. No special framing or grounds are required. Fits without alteration of window jambs and casings.

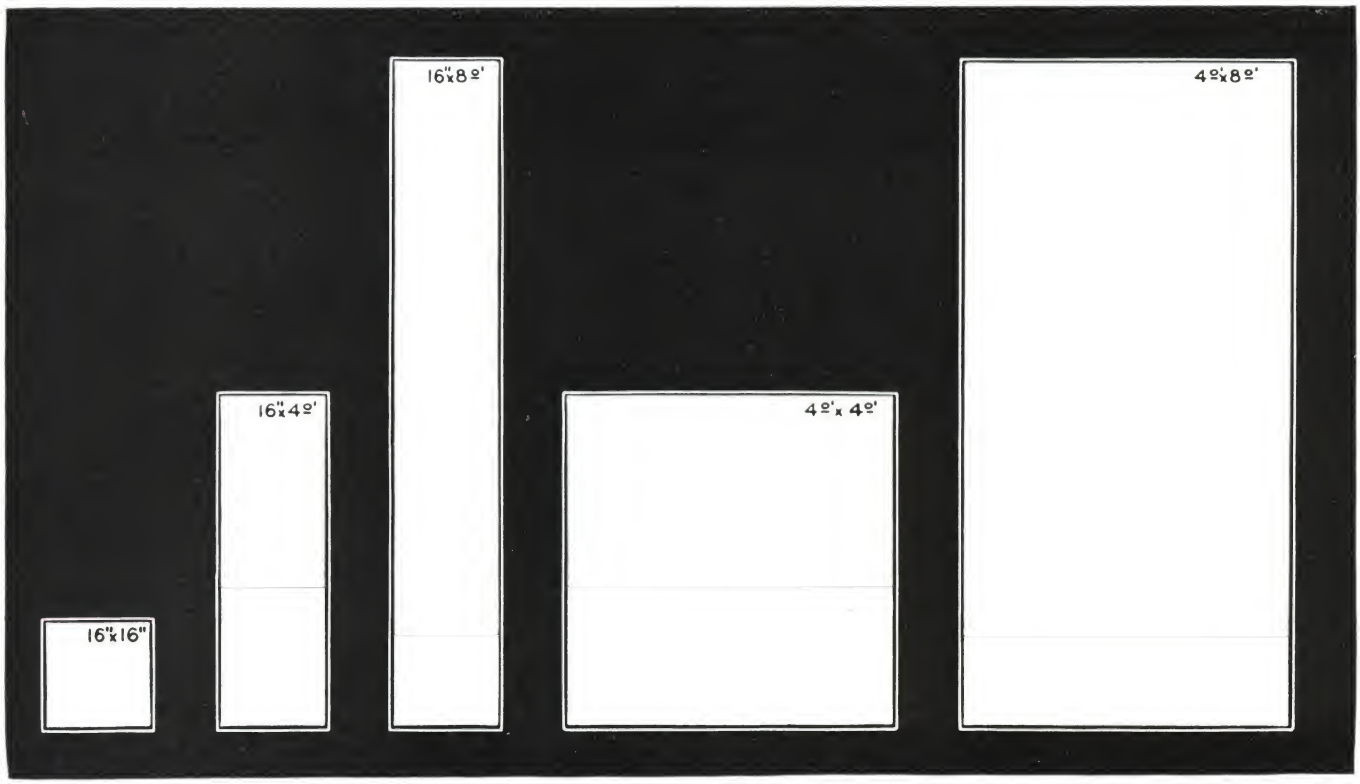
It is available in standard No. 83 Celotex Ivory Color—attractive in itself and paintable at a later date if desired. Again the joint is the thing that makes painting practical. It hides, deep in its shadowed recesses, the point at which paint cracks appear.

Application is rapid, because all units are correctly sized to fit standard construction with studs on 16 in. centers. Side and end matching permits either horizontal or vertical treatment. The thickness speeds application, several sized units permit great flexibility in design to meet requirement.

Both side wall and ceiling treatments can be improved when attempts to conceal joints are abandoned. With these new Celotex Key Joint Units, the joints are frankly accented.

The five units, all designed on 16-in. modules, are adaptable to many interesting pattern combinations forming the simple symmetrical designs. On request, The Celotex Corporation will furnish a series of suggestive diagrams as a guide for the use of these standard units on both walls and ceilings.

THE FIVE SIZES OF KEY JOINT UNITS, ALL ¾ INCH THICK IN NO. 83 CELOTEX DEEP IVORY COLOR



INSTALLATION DETAILS—KEY JOINT UNITS

FIRST—Design all four walls or the complete ceiling before applying any material. Determine exact position of every unit relative to joists, studs, openings, light fixtures, etc. Start applying Celotex Key Joint Units in one corner. Cut the side of the first unit into a corner so that the opposite side of unit centers on proper stud or joist and add subsequent units, working in one direction. Fit units in moderate contact.

FIT CORNERS of room by scribing one unit to a tight fit to adjacent unit (Fig. 2) using butt joint as shown.

OUTSIDE CORNERS, fit as per Fig. 3, or where outside corners are of a door, arch, or other opening through wall section, fit as per Fig. 4. This corner should be protected if possible.

TONGUE AND GROOVE FLOORING FOR FLUSH BASEBOARDS—Fig. 5 shows a convenient method of using (4 or 6 in.) Tongue and Groove flooring for flush baseboard, or as furring for conventional baseboard. This type of base eliminates the necessity for headers behind the units and enables 8 ft. units to reach ceiling heights of 8 ft. 4 in. or 8 ft. 6 in.

NAILING—Space nails 3 in. apart on all edges, drawing nails down into detail, as per Fig. 1, where they will be reasonably concealed by the shadow of the joint detail. 1½ in. Cadmium plated, needlepoint, No. 17 gauge nails with $\frac{3}{32}$ in. flat heads are recommended. They shall be driven snug but not "set"—the Cadmium finish will not be unsightly or conspicuous. If intermediate nailing is done with 1¾ in. finishing nails, drive them at an angle and set flush. All nailing on intermediate studs should be spaced 6 in. apart.

SPACING OF FRAMING—Where framing has been done without regard for use of Key Joint Units, some irregularities may be found necessitating occasional use of additional studs or joists to achieve uniform or symmetrical designs. In most instances slight changes or adjustment of interior design will suffice without additional framing being needed.

APPLICATION SPECIFICATIONS—The application is similar to that of Celotex Building Board for Interior Finish—See Specification No. 6.

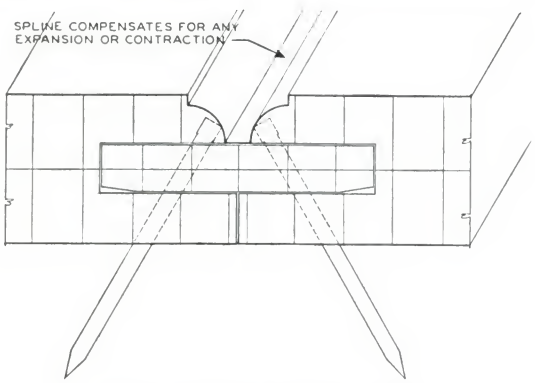
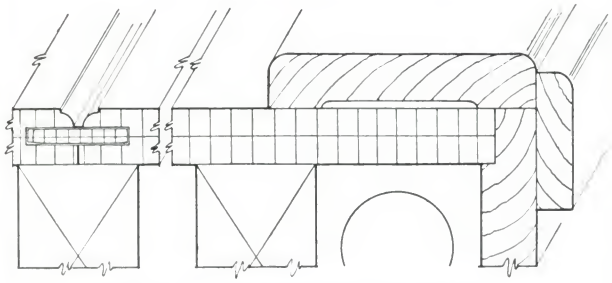


FIG 1—Full Size Detail at Joint



The Thickness Fits Standard Window Frames

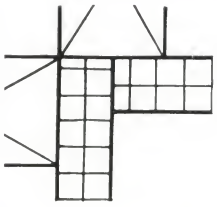


FIG. 2

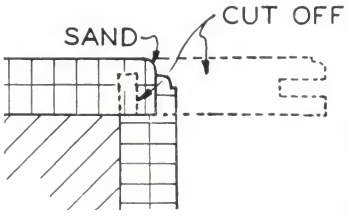


FIG. 3

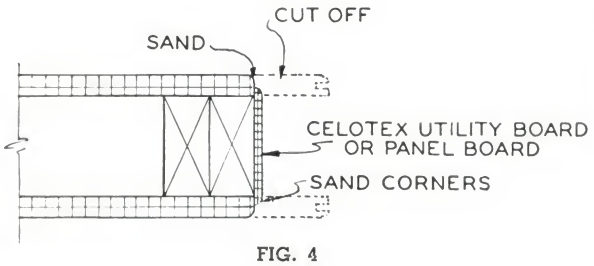


FIG. 4

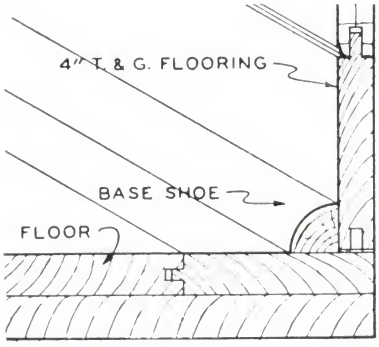
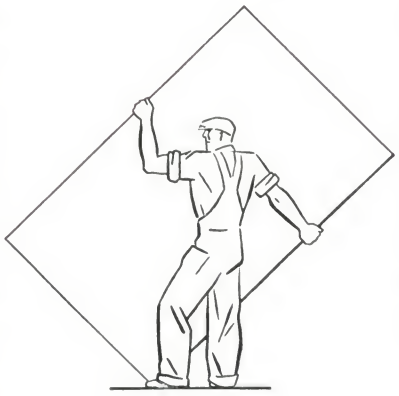


FIG. 5

METHODS OF APPLYING CELOTEX

The methods of application here outlined are the result of years of experience in testing and installing Celotex products and the performance of these products under a wide range of conditions. The master specifications indicate the Celotex product or products best adapted for each purpose and, where necessary, limit the use to conditions for which long life and satisfactory performance can be assured.



When installed according to these standards of good practice, *Celotex Building Board, *Vapor-seal Insulating Sheathing, Insulating Lath, Plank and Tile Board carry the Life-of-the-Building Guarantee, backed by the entire resources of The Celotex Corporation.

Except as exterior finish

SPECIFICATION No. 1 — WALL SHEATHING

CELOTEX VAPOR-SEAL SHEATHING OR CELOTEX BUILDING BOARD

NOTE: *See Specification No. 2 for roof sheathing for pitched roofs.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Sheathing shall be **[Celotex Vapor-seal Insulating Sheathing 25/32 inch thick] [Celotex Building Board [½] [1] inch thick],** 4 feet wide by length best adapted.

NOTE: *Vapor-seal Insulating Sheathing is preferable for most cases. See description on page 9.*

The following wall areas shall be covered:

NOTE: *Here list and locate. If more than one kind or thickness is used, list separately and the respective areas covered.*

Vapor-seal Insulating Sheathing

(3) APPLICATION

(3a) GENERAL—Insulation continuity shall be maintained. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2x4 inch nailing headers cut in between framing members. All joints shall center over framing.

(3a1) Vapor-seal Insulating Sheathing shall be erected with the aluminum side next to the framing members.

(3a2) When using Celotex Building Board as sheathing in dry weather, moisten Building Board by sprinkling lightly with hose or sprinkling can or with a broom dipped into a pail of water, and pile one day before application. Remove boards from the pile just prior to nailing to the frame.

(3b) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame members.

NOTE: *Celotex boards are 1/8 inch less than full theoretical dimensions to allow for spacing as above on standard framing members.*

(3c) NAILS—

(3c1) Use 2 inch galvanized nails with ⅜ or ½ inch heads for Vapor-seal Sheathing.

(3c2) Use 1½ inch galvanized nails with ⅜ inch heads for ½ inch thick Building Board.

(3c3) Use 2 inch galvanized nails with ⅜ or ½ inch heads or 8d common nails for 1 inch thick Building Board.

(3d) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails

6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

NOTE: *The surface of Vapor-seal Insulating Sheathing is indented to show proper location of nails.*

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions when and where they apply.*

NOTE: *Celotex is not a nailing base.*

(4a) CONSTRUCTION—Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing. All inner stud spaces shall be securely blocked off at plates and sills to prevent free circulation of air through such places.

(4b) WOOD SIDING—All joints shall butt over the center of a stud. Nail through Celotex to each stud using nails of sufficient length to pass through the Celotex and penetrate the stud at least 1 inch.

(4c) MASONRY VENEER—Masonry veneer shall be laid in the usual manner allowing not less than ½ inch space between the face of the Celotex and the back of the veneer. Metal ties for masonry veneer shall be nailed through Celotex into the studs. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing studs at least 1 inch.

(4d) EXTERIOR STUCCO—

(4d1) Flashing—Flash over the head casings of all windows and doors with metal or prepared roofing.

(4d2) Waterproof Building Paper—Cover all Celotex surfaces beneath exterior stucco with a continuous layer of asphalt coated waterproof paper. (See file index for catalog on Celotex Built-Up Roofing.)

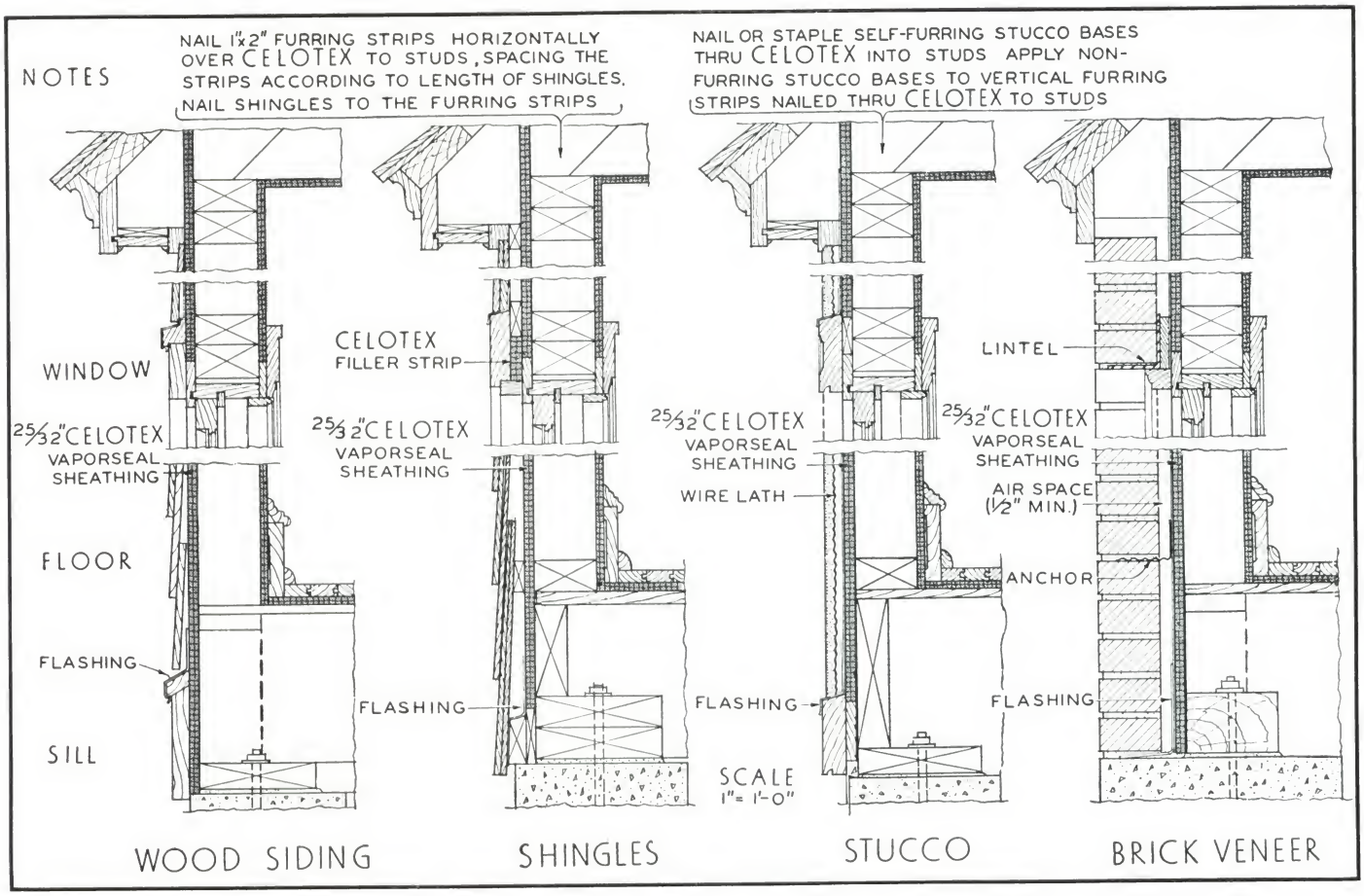
(4d3) Self-Furring Stucco Bases—Self-furring stucco bases, such as beveled wood lath and various forms of self-furring wire and expanded metal lath, shall be applied directly over Celotex and paper, nailing or stapling through the Celotex into the studs with standard penetration into the wood.

(4d4) Non-Furring Stucco Base—(a) Provide 1 x 2 inch wood furring strips nailed vertically to each stud over Celotex and paper to form furring for metal lath stucco base. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

(b) Metal furring, round steel rods, or galvanized crimped band iron shall be stapled or nailed through the Celotex into the studs with standard penetration into the wood. Metal lath stucco base shall be wired to the furring.

(4e) FURRING STRIPS FOR RIGID SHINGLES, ETC.—Provide 1 x 2 inch wood furring strips laid at right angles to framing members, over the Celotex, properly spaced to take shingle weather exposure. Nails shall be of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

APPLICATION OF CELOTEX
AS WALL SHEATHING



SPECIFICATION No. 2 — INSULATING PITCHED ROOFS

CELOTEX BUILDING BOARD, ROOF INSULATION OR VAPOR-SEAL INSULATING SHEATHING

NOTE: *Where insulation is to be covered with built-up roofing, apply Celotex Roof Insulation in accordance with Specification in Celotex Roofing Catalog.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

Rafters shall be spaced 12 inches or 16 inches on centers. Insert 2-inch x 4-inch headers between framing members at the end of all Celotex boards to serve as a nailing base.

(2) MATERIALS

Roof Insulation shall be Celotex **[Roof Insulation] [½] [1] [1½] [2] inch or greater thickness in multiples of ½ inch, size 22 inches x 47 inches]; [[½] [1] inch Celotex Building Board]; [25/32 inch Vapor-seal Insulating Sheathing].**

NOTE: *Where Celotex is applied directly over roof rafters, specify either Celotex Building Board or Celotex Vapor-seal Insulating Sheathing. Building board is available in thicknesses of 1/2 inch or 1 inch. Vapor-seal Insulating Sheathing is 25/32 inch thick. Both are furnished in 4-foot widths and in various lengths. If more than 1 inch insulation is required, additional thickness may be applied to under side of roof rafters. Where Celotex is to be applied directly over wood sheathing, specify Celotex Roof Insulation, 22 inches x 47 inches with square edges or with offset edges in 1 inch or greater thickness.*

(3) APPLICATION

(3a) CELOTEX APPLIED DIRECTLY OVER ROOF RAFTERS—Nail Celotex **[Building Board] [Vapor-seal Insulating Sheathing]** directly to the top of roof rafters. Apply the boards with the length parallel with the rafters with ample bearing for nailing along all edges. Nail to intermediate framing members first, spacing nails 6 inches apart and then nail along the edges, spacing nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the surface. Leave ⅛ inch space between adjoining boards at sides and ends. Celotex is cut scant in width and length to allow for this space. Never force Celotex into place. Use **[standard ⅜ inch head, 1½ inch galvanized roofing nails for ½ inch Building Board] [2 inch galvanized nails with ⅜ or ½ inch heads or 8d common nails for 1 inch Building Board] [⅜ or ½ inch head, 2 inch galvanized nails for Vapor-seal Insulating Sheathing].**

(3a1) In dry weather, moisten Celotex Building Board the day before application by sprinkling lightly with a broom dipped into a pail of water, and pile. Remove boards from the pile just prior to nailing to rafters.

(3a2) Wood Sheathing Over Celotex—

(a) Apply wood sheathing over Celotex, driving nails into roof rafters using nails of sufficient length to penetrate roof rafters at least 1 inch.

NOTE: *The above method is suitable for metal roofing, asphalt shingles, composition roofing, rigid asbestos shingles, slate or tile or standing or batten seam metal roofing.*

(b) Over the wood sheathing, apply a continuous course of Celotex **[specify weight]** waterproof felt.

NOTE: *Include the above under slate, tile and rigid asbestos shingles.*

(c) Roofing shall be nailed to wood sheathing.

(3a3) 1 x 2-inch Wood Strips Over Celotex—

NOTE: *This method of application is suitable for wood shingles, rigid asbestos shingles, slate or tile.*

(a) Over the Celotex apply a continuous course of Celotex **[specify weight]** waterproof felt.

NOTE: *Include the above where slate or tile roofing or rigid asbestos shingles are to be used.*

(b) Apply wood strips over Celotex or felt properly spaced to conform to roofing units. Strips shall be nailed firmly to rafters, using nails of sufficient length to penetrate rafters at least 1 inch.

(c) Provide a 1-inch thick solid wood base over Celotex under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc., to which to attach the metal in accordance with standard practice.

(d) Nail roofing units directly to wood strips thus installed.

(3b) CELOTEX APPLIED OVER WOOD SHEATHING—All roof sheathing boards shall be properly nailed to roof rafters before insulation is applied. Nails shall be of sufficient length to pass through insulation and to penetrate firmly (at least ¾ inch) into roof deck. Use galvanized nails with ⅜ to ½ inch heads. Each Celotex board shall be secured in place by nailing along each edge, spacing nails 12 inches apart, and also staggered along longitudinal center line.

(3b1) 1 x 2-inch Wood Strips Over Celotex—

(a) Over the Celotex apply a continuous course of Celotex **[specify weight]** waterproof felt.

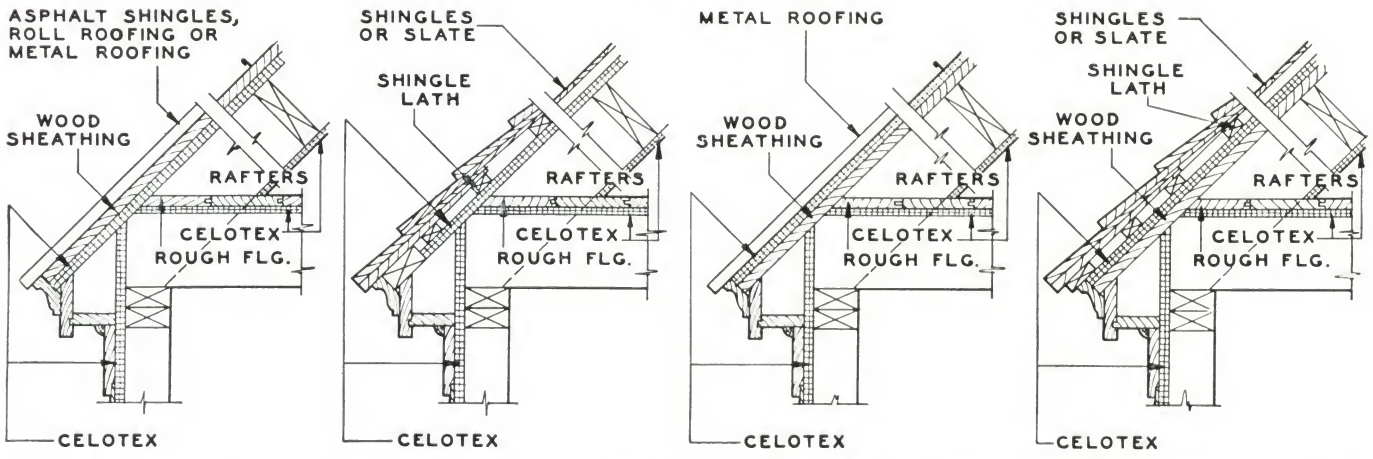
NOTE: *Include the above where slate or tile or rigid asbestos shingles are to be used.*

(b) Apply wood strips (shingle lath), properly spaced to conform to roofing units, over Celotex or felt. Nails shall be driven through Celotex firmly into underlying wood roof sheathing.

NOTE: *Include the above paragraph where wood shingles, rigid asbestos shingles, slate or tile are to be used.*

(c) Nail roofing units directly to wood strips thus installed.

Insulating Pitched Roofs



SPECIFICATION No. 3 — EXTERIOR WALL FINISH

CELOTEX VAPOR-SEAL SHEATHING OR CELOTEX BUILDING BOARD

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Exterior finish shall be **[Celotex Vapor-seal Insulating Sheathing 25/32 inch thick] [Celotex Building Board [½] [1] inch thick]** 4 feet wide by length best adapted.

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) MOISTENING CELOTEX BUILDING BOARD—Moisten and pile boards one day before application. Moisten by sprinkling lightly with a hose or sprinkling can or from a broom dipped into a pail of water. Remove boards from the pile just prior to nailing to the framing.

(3b) GENERAL—Insulation continuity shall be maintained. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2 x 4-inch nailing headers, cut in between framing members. All joints shall center over framing.

(3c) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame members.

NOTE: *Celotex boards are ⅛ inch less than full theoretical dimensions to allow for spacing as above on standard framing 16 inches on centers.*

(3d) NAILS—

(3d1) Use 2-inch galvanized nails with ⅜ or ½-inch heads for Vapor-seal Insulating Sheathing.

(3d2) Use 1½-inch galvanized roofing nails with ⅜-inch heads for ½-inch thick Building Board.

(3d3) Use 2-inch galvanized nails with ⅜ or ½-inch heads or 8d common nails for 1-inch thick Building Board.

(3e) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

(3f) PAINTING EXPOSED EXTERIOR FINISH—After proper sizing, the surface of Celotex Building Board should be given two coats of a good lead and oil paint. If Vapor-seal Sheathing is specified, use aluminum or other paint suitable for use over asphalt. Painting should be done before battens or wood trim are applied over joints.

(3g) BATTENS AND WOOD TRIM—Apply battens and wood trim **[as detailed]** over Celotex with nails of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

Horizontal Wood Strips Over Vapor-seal Insulating Sheathing

SPECIFICATION No. 4 — PLASTER BASE

CELOTEX INSULATING LATH

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Plaster base shall be **(Celotex Lath) (½) (¾) (1)** in. thick and **(Celotex Vapor-Seal Lath) (½) (1)** in. thick, 18 in. wide x 48 in. long, with beveled edges and long edges shiplapped, delivered to the building site in the original manufacturer's packages.

The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate. For outside walls and top story ceilings, specify Vapor-Seal Lath. For other wall or ceiling surfaces, specify regular Celotex Lath. If more than one kind or thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) GENERAL—Do not moisten lath units before application.

Apply lath with beveled edges and branded side out with the length at right angles to the framing **[or furring]** members. End joints shall be staggered and centered over framing members.

Celotex Lath Provides a Continuous Plastering Surface

Where piecing out is necessary, use only strips of Celotex. Accurately cut and fit lath around all electric outlet boxes, piping, etc.

(3b) SPACING—Bring edges together in moderate contact.

(3c) NAILS—

(3c1) Use 1⅛-inch long, special blued plasterboard nails with $\frac{5}{16}$-inch heads for ½-inch thick Celotex Lath.

(3c2) Use 1¾-inch special blued plasterboard nails with $\frac{5}{16}$-inch heads for ¾-inch and 1-inch thick Celotex Lath.

(3d) NAILING—Nail lath units securely to each framing **[or furring]** member with 5 nails spaced uniformly approximately 3 inches apart (20 nails to each unit).

On curved surfaces, first nail at center to intermediate supports and spring to the contour of the framing.

(3e) ANGLE REINFORCEMENT—All corners shall be reinforced with metal corner beads. All re-entrant angles shall be reinforced with expanded metal angle lath strips. Reinforcement shall be securely stapled over Celotex Lath. Use 6-inch strips of expanded metal lath at juncture of frame and masonry constructions.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(4a) CONSTRUCTION—Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce for all wood framing.

(4b) FURRING—Fur all exterior masonry walls to receive Celotex Lath with **[1x2 inch] [specify]** furring strips set 12 inches or 16 inches on centers accurately shimmed to a true, level plane. Secure substantially to masonry.

(4c) GROUNDS—Furnish and erect, substantially secured to framing members, wood grounds of sufficient thickness to provide a full ½ in. of plaster on Celotex Lath.

Where ¾-inch and 1-inch thick Celotex Lath units are used, add the necessary trim grounds on all door and window frames to compensate for any difference in the overall thickness of Celotex Lath plus full ½ in. of plaster.

(4d) ELECTRIC OUTLETS—Where ¾ and 1-inch thick Celotex Lath units are used, set electric outlet boxes to accommodate a full 1¼ and 1½-inch thickness from face of stud or joist to face of plaster.

(5) PLASTERING

(5a) CAUTION—Do not wet Celotex Lath before applying plaster.

(5b) INSPECTION—Inspect nailing and notify lather of any portions of Celotex Lathing not adequately secured in accordance with the manufacturer's specifications. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal angle strips.

(5c) PLASTER—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coats shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum, mixed in accordance with the manufacturer's specifications.

NOTE: *Lime plaster, lime gauged with gypsum, or gypsum plaster containing more than ten per cent of lime should not be used for scratch or brown coats.*

(5d) APPLICATION—Apply in three (3) coats to full ½-inch thickness in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform ½-inch plaster thickness.

In applying the scratch coat of plaster, it shall be carefully pressed into all beveled edges and joints to provide plaster reinforcement at these vital points.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members with the darby spanning two studs or joists.

(5e) VENTILATION—Provide adequate ventilation for the proper drying of the plaster.

NOTE: *Due to the moistureproof characteristics of Celotex Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(5f) HEAT—Provide adequate heat to prevent injury to fresh plaster by frost.

SPECIFICATION No. 5

CELOTEX BUILDING BOARD AS A BASE FOR PLASTIC PAINTS AND WALL COVERINGS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

All framing shall be 12 inches or 16 inches on center.

(2) MATERIAL

Wall base shall be Celotex Building Board. Boards shall be **[½] [1]** inch thick, 4 feet wide by length best adapted.

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

(3) APPLICATION

(3a) SEASONING—The Celotex boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather moisten the Celotex lightly and pile the boards 24 hours before erection.

(3b) GENERAL—Celotex shall be applied immediately prior to the erection of interior wood trim. Apply Celotex with the length parallel with framing members. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Where intermediate end joints are necessary, provide 2 x 4-inch nailing headers cut in between framing members. All joints shall center over framing members.

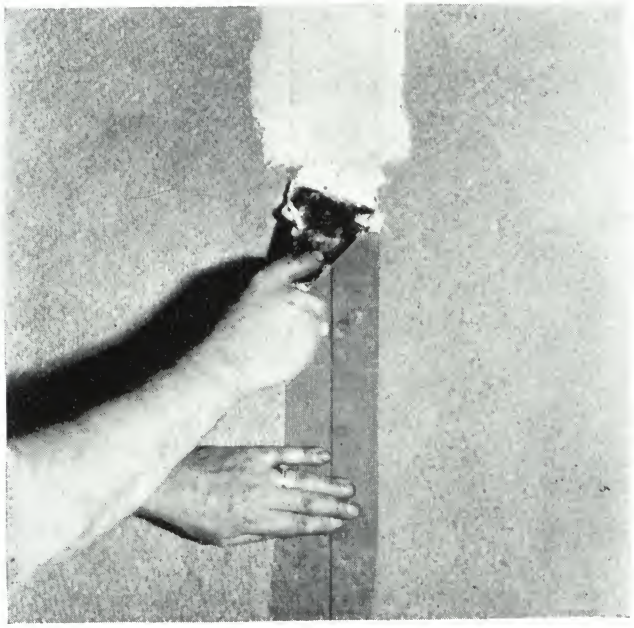
(3c) SPACING—Space boards ⅛ inch apart at all edges. At window and door frames bring Celotex in close contact with frame.

NOTE: *Celotex boards are ⅛ inch less than full theoretical dimensions to allow for spacing as above on standard framing.*

(3d) NAILS—Galvanized shingle, roofing or box nails.

(3d1) Use 1½-inch for ½-inch thick Celotex.

(3d2) Use 2-inch for 1-inch thick Celotex.



Celotex Joint Stripped with Galvanized Annealed Wire Mesh, Bonded with Bonding Cement

Wall Finished with Leather Applied Over Celotex Building Board

(3e) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and ⅜ inch in from the edge. Drive nails until the heads are slightly below the Celotex surface.

(3f) COVERING JOINTS—With coarse sandpaper rub down a recessed area from 4 to 6 inches wide at joints. Strip joints with galvanized annealed wire mesh, 12 or 16 to the inch, bonding the screening to the Celotex with bonding cement such as Swedish putty. The wire mesh, obtainable from The Celotex Corporation should not be nailed in place except when starting a joint and occasionally on ceiling strips to hold in place while applying cement. Hold one end of strip while the cement is applied to the surface of the wire and pressed through the mesh with a 4-inch painter's scraping knife. Spread the cement beyond the edges of the screen for not less than 1 inch so that the edge of the wire cloth will not show through the plastic paint finish. In bonding the wire over the joints, press firmly against the Celotex and fill mesh with cement applied in the consistency of putty. Apply, similarly, a strip of wire cloth bent around all corners and re-entrant angles.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions when and where they apply.*

(4a) CONSTRUCTION—Follow standard recommendations of Building Code Committee of U. S. Department of Commerce for all wood framing.

(4b) FURRING—Fur masonry walls with **[1 x 2 inch] [specify]** furring strips set 12 inches or 16 inches on center accurately shimmed to a true, level plane. Secure substantially to masonry.

(4c) ELECTRIC OUTLETS—Set electric outlet boxes to finish flush with the face of the Celotex Building Board.

(4d) APPLICATION OF PLASTIC PAINT AND WALL COVERINGS

NOTE: *See page 23, "Decoration of Celotex."*

SPECIFICATION No. 6 — INTERIOR FINISH

CELOTEX BUILDING BOARD

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 7 and 8. Where more than one Celotex Interior Finish Product is being used, the application of all such products may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing disposition, size, and thickness of units, including ornamental tile and mouldings, should be included and referred to in the specification.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

(1a) Studs and joists shall be framed to conform accurately to the design of board spacing or paneling, set 12 or 16 inches on center. Use additional studs, joists, and headers where necessary. Provide headers back of all wainscot caps, chair rails, baseboards, and other heavy wood trim.

(1b) Framing to receive Celotex used as interior finish shall be straight and shall provide a true, even nailing base.

(1c) Provide **[1 x 2 inch] [specify]** furring strips set according to the design and on 12 or 16-inch centers, accurately shimmed to a true level plane. Secure substantially to solid masonry or wood base.

(2) MATERIAL

Interior finish shall be Celotex Building Board. Boards shall be **[½] [1]** inch thick, 4 feet wide by length best adapted.

The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate. If more than one thickness is used, list separately and the respective areas covered.*

NOTE: *See Table 1, page 6 for available colors.*

(3) CUTTING AND FITTING

NOTE: *Celotex may be treated with battens and mouldings covering the joints or with exposed V-joints and grooves.*

(3a) JOINTS TO BE COVERED—Cutting may be done with a fine tooth saw, using a sharp blade, with rapid strokes and a minimum of pressure. Mouldings shall be **[wood] [metal] [Celotex] [specify width and thickness].**

NOTE: *Celotex mouldings are available in a variety of attractive designs which add greatly to the beauty of Celotex interiors.*

(3b) V-JOINTS AND V-GROOVES—Cuts, bevels, and V-grooves shall be made with a special tool against a straight edge and shall be clean and true.

(4) APPLICATION

(4a) SEASONING—The Celotex boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions.

(4b) GENERAL—Celotex shall be applied immediately prior to the erection of interior wood trim. Apply Celotex with the length parallel with framing members with the **[smooth face] [textured face]** exposed. All joints shall center over framing members.

(4c) SPACING (JOINTS TO BE COVERED)—Space boards ⅛ inch apart at edges.

(4d) SPACING (EXPOSED AND V-JOINTS)—Bring boards to a moderate contact. Do not force into place.

(4e) NAILS—

(4e1) For ½-inch thick Celotex, use standard 1½-inch long galvanized shingle nails or galvanized roofing nails where joints are covered with battens, mouldings, or wood trim. Use 1¼-inch long galvanized finishing nails, No. 17 flat head cadmium plated or No. 16 brads where nailing is exposed.

(4e2) For 1-inch thick Celotex, use 2-inch galvanized shingle or box nails where joints are covered with battens, mouldings, or wood trim. Use 1¾-inch galvanized finishing nails, needle point brads, or No. 16 brads where nailing is exposed.

(4f) NAILING—First nail Celotex to intermediate framing members and then nail the edges. On intermediate framing members, space nails 6 inches apart. At all edges space nails 3 inches apart and approximately ⅜ inch in from the edge. Where nailing is exposed, drive finishing nails at an angle and set the heads flush with the Celotex surface (Use of a nail set is recommended to avoid hammer marks). Where nails are covered by battens, mouldings, or wood trim, drive nails until the heads are slightly below the Celotex surface.

(4g) MOULDINGS, BATTENS AND TRIM—Apply **[as detailed]** over Celotex with nails of sufficient length to pass through the Celotex and penetrate the framing members at least 1 inch.

Grill Room Walls and Ceiling
Finished with Celotex Building Board and Grooved Overlays

Celotex Building Board Easily Sawed or Cut
For Accurate and Close Fitting for Interior Finish

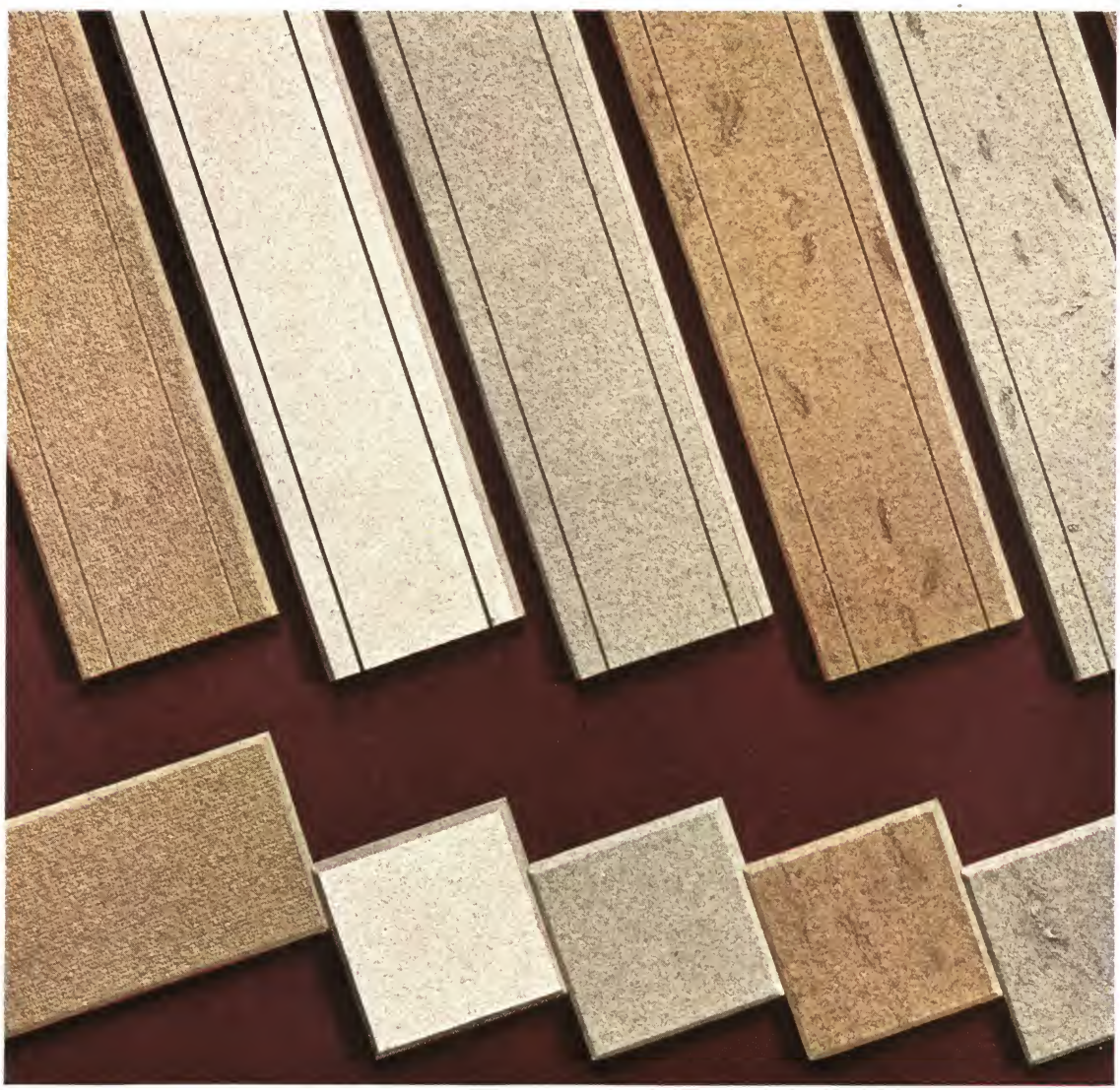
CELOTEX MOULDINGS

Shown in natural color are the standard types of Celotex Mouldings. Nos. 200 and 210 are made of Celotex Panel Board; all others have a Celotex Cane Fiber base. Special mouldings available at additional cost.

DIMENSIONS

Nos. 200 and 210—3½ in. wide, ¼ in. thick.
Nos. 150 and 151 (similar), 3 and 6 in. wide, ½ in. thick.
Nos. 101, 102, and 103—3, 6, and 9 in. wide, ½ in. thick.
No. 100—3½ in. wide, ½ in. thick.
No. 170—5 in. in diameter, ½ in. thick.
No. 130—1 in. by 1 in., flat diagonal.
Nos. 120 and 121—¾ x ¾ in. and 1¼ x 1¼ in. cove.
No. 111—1 in. wide, ½ in. maximum thickness.
No. 110—2 in. wide, ½ in. maximum thickness.
No. 105—2½ in. wide, ½ in. thickness.

At bottom left are shown the finishes on reverse sides of Celotex Building Board—tapestry (at left) and smooth sanded (at right).



A PHOTOGRAPH IN NATURAL FULL COLOR

CELOTEX INSULATING FINISH PLANK AND TILE—Left to right, Natural Color, Tapestry Texture; No. 83 Ivory Color, Smooth Finish; No. 53 Natural Color Sanded; No. 75 Light Brown Ripple and Sanded; No. 55 Natural Color, Rippled and Sanded. Plank ½ in. thick. Tile ½ and 1 in. thick. See table, page 4, for widths and lengths.

Below—**CELOTEX ORNAMENTS**—Desirable to add a final touch of beauty to ceilings. Square units are either 12 by 12 in. or 16 by 16 in. Circular unit is 22 in. in diameter. All ornaments ½ in. thick, natural color. Top row, left to right, C-32, C-33, M-1 (Circular), C-6, C-2. Bottom row, C-8, C-31, C-9, C-10.

A PHOTOGRAPH IN NATURAL FULL COLOR

SPECIFICATION No. 7 — INTERIOR FINISH

CELOTEX TILE BOARD

NOTE: *This specification may also be used for the application of Celotex Ornamental Tile. Celotex Mouldings and Ornaments shall be in sizes and designs as indicated on pages 19 and 20.*

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 6 and 8. Where more than one Celotex Interior Finish Product is being used, the application may be covered in one consolidated specification. For best results, detailed elevations of walls and plans of ceilings showing disposition, size, and thickness of units, including ornamental tile and mouldings, should be included and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) BASE

NOTE: *Select base best adapted to design and construction.*

(1a) SOLID WOOD BASE—Cover framing with 4, 6 or 8 inch wide, matched 25/32 inch-thick, lumber to form a continuous level nailing base.

(1b) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ inch thick) to form a continuous level nailing base.

(1c) FURRING STRIPS—Provide **[1 x 3 inch] [1 x 4 inch] [2 x 2 inch] [2 x 4 inch]** furring strips to conform to the Tile design, 8, 12, or 16 inch on centers. Shim where necessary to a true plane. Strips spaced 8 inches on center are preferred for 16 x 16-inch tile.

(1d) FRAMING—Space framing to conform to the size of units used, but not to exceed 16 inches on center.

(1e) PLASTER BASE—Shall be tested level and solid.

(2) MATERIALS

(2a) Interior finish shall be Celotex Tile Board of size, type of joint, thickness, and finish as indicated on drawings.

NOTE: *Sizes and thicknesses of Celotex Tile Board are given on page 4. Types of joints and colors are given in Tables 1 and 2 on page 6.*

(2b) Adhesive shall be Celotex **[Plastic Heavy Body] [Light Body]** Adhesive or approved equal.

NOTE: *Include above when adhesive is required. Celotex Plastic Heavy Body Adhesive is used for applying Celotex to rough or smooth surfaces with or without supplementary nailing. Celotex Alcohol Base Light Body Adhesive is used for applying Celotex to smooth surfaces with supplementary nailing.*

(2c) The following **[wall] [and] [ceiling]** areas shall be covered:

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Size and thickness of units, type of joint, and colors should be included in the drawings and referred to here.*

(3) CUTTING AND FITTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cutting may be done with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife or special tool against a straight edge.

(4) APPLICATION

NOTE: *Tile may be applied by cementing and nailing over plaster base or by nailing over wood or plaster.*

(4a) SEASONING—Condition all Tile Board by opening packages and allowing to stand 24 hours for adjustment to atmospheric conditions before erection.

(4b) GENERAL—

(4b1) Celotex Tile Board **[and Celotex Mouldings and Ornaments]** shall be laid in exact accordance with the detail drawings.

(4b2) Celotex Tile Board with Type B Joint shall be applied with long edges at right angles to furring strips.

(4c) SPACING—Bring units to a moderate contact. Do not force into place.

(4d) ADHESIVE—For cementing and nailing Celotex Tile Board to plaster, use Celotex Adhesives or other approved adhesives.

(4e) NAILS—Galvanized finishing nails No. 17 flat head cadmium plated needle point brads, or No. 16 brads.

(4e1) Use 1¼ inch for ½-inch Celotex.

(4e2) Use 1¾ inch for 1-inch Celotex.

NOTE: *For nailing Celotex Tile Board to plaster surfaces, cement coated nails are recommended.*

(4f) CEMENTING AND NAILING OVER PLASTER—

NOTE: *Advocated in better class of work but only where the plaster is sound.*

Apply spots of adhesive 3 or 4 inches in diameter to the back surface near each corner with additional spots approximately 8 to 10 inches apart over the area of large tile. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide the tile into position, level and true, and nail tiles in position with one or two nails at each corner and additional nails as required for large tile. Set heads neatly below the Celotex surface.

(4g) NAILING OVER WOOD BACKING (Continuous or Furring Strips)—Use one nail at each corner and additional nails 6 inches apart along edges and center line resting upon framing. Drive nails at an angle and set flush or just below the surface of Celotex.

Celotex Tile Board Ceiling

Tile Board Ceiling and Walls

SPECIFICATION No. 8 — INTERIOR FINISH

CELOTEX FINISH PLANK

NOTE: *For application of other Celotex Interior Finish Products, see Specifications Nos. 6 and 7. For the best results, accurate, detailed elevations of walls and plans of ceilings showing disposition, size, etc., including other interior finish products, should be included in the drawings and referred to in the specifications.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) BASE

NOTE: *Select base best adapted to design and construction.*

(1a) SOLID WOOD BASE—Cover framing with 4, 6, or 8-inch wide, matched lumber to form a continuous level nailing base.

(1b) PLYWOOD BASE—Cover framing with plywood (preferably ⅜ inch thick) to form a continuous nailing base.

(1c) FURRING STRIPS—Provide **[1 x 3 inch] [1 x 4 inch] [2 x 2 inch] [2 x 4 inch]** furring strips at right angles to Plank on 9-inch centers up to shoulder height and 12 or 16 inch on centers above this height. Shim where necessary to a true, level plane.

(1d) PLASTER BASE—Shall be tested level and solid.

(2) MATERIALS

(2a) Interior finish shall be Celotex Finish Plank of size, type of joint, thickness, and finish indicated on drawings.

NOTE: *See page 4 for dimensions, colors, etc.*

(2b) Adhesive shall be Celotex **[Plastic Heavy Body] [Light Body]** Adhesive **[specify]** or approved equal.

NOTE: *Include above where adhesive is required. Celotex Plastic Heavy Body Adhesive is used for applying Celotex to rough or smooth surfaces, with or without supplementary nailing. Celotex Alcohol Base Light Body Adhesive is used for applying Celotex mouldings to smooth surfaces in conjunction with supplementary nailing.*

(2c) The following **[wall] [and] [ceiling] areas shall be covered.**

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. Refer here to drawings. See (2a).*

(3) CUTTING AND FITTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cutting may be done with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife or special tool against a straight edge.

(4) APPLICATION

NOTE: *Plank may be applied by cementing and nailing over plaster base or by nailing over wood or plaster. (See paragraph (1) above).*

(4a) SEASONING—Condition all Celotex Finish Plank by opening packages and allowing to stand 24 hours for adjustment to atmospheric conditions before erection.

(4b) SPACING—Bring units to a moderate contact. Do not force into place.

(4c) ADHESIVE—For cementing Celotex Finish Plank to plaster, use Celotex Adhesive or other approved adhesives.

(4d) NAILS—Galvanized finishing nails No. 17 flat head cadmium plated needle point brads, or No. 16 brads.

(4d1) Use 1¼-inch for ½-inch Celotex.

(4d2) Use 1¾-inch for 1-inch Celotex.

NOTE: *For nailing Celotex Finish Plank to plaster surfaces, cement coated nails are recommended.*

(4e) CEMENTING OVER PLASTER—

NOTE: *Advocated in better class of work.*

Apply the adhesive in ribbons 3 or 4 inches wide along the long edges with additional intermediate ribbons of adhesive along the centers of wider planks. Exercise care to prevent adhesive from appearing on the exposed finished side. Slide the plank into position, level and true, and nail plank in position with one or two nails at each corner and additional nails as required. Drive nails in beaded groove of Plank and set heads neatly below the Celotex surface.

NOTE: *Use the above method only where the plaster is sound.*

(4f) NAILING OVER WOOD BACKING (Continuous or Furring Strips)—Space nails 6 inches apart wherever possible. Drive nails in beaded groove of Plank and set heads neatly below Celotex surface.

SPECIFICATION DATA — DECORATION OF CELOTEX

PLASTIC PAINTS, STAINING, PAINTING, PAPERING, ETC.

NOTE: *For complete information on the decoration of Celotex, Celotex Panel Board, and Celotex Hard Board, ask for Technical Notes 43 and 44.*

(1) WATER PAINTS

Calcimines and water paints should be applied directly to unsized Celotex, although calcimine may also be applied to varnish-sized Celotex to facilitate removal by washing.

Water paints of the casein base class are washable to a certain degree but not quite as much so as oil or varnish paints.

A single coat of good casein base water paints, such as Sunflex, Rayolite, Luminall, and Kameo will give very good coverage on Celotex, although two coats are recommended. Some of these paints are available tinted in a variety of attractive pastel shades. Others can be tinted from the white by the addition of dry colors in accordance with manufacturers' directions.

(2) STAINS

Stains may be used where the natural color of the Celotex is to be modified without destroying the Celotex texture and where its acoustical absorption properties are of importance. While a variety of stains are available, glue stains give the best results on Celotex. A satisfactory glue stain may be made by dissolving ½ lb. of flake or ground glue in a gallon of boiling water. After the glue has been thoroughly dissolved, dry color is added in amounts depending on the depth of tone required. The dry colors are best added by mixing them with a small amount of water, stirring to a thin paste which is more easily taken up by the glue solution. Glue stains of this type must be used quite promptly after preparation. Preferably, they should be applied while they are still warm. Alcohol stains are not recommended—they dry too rapidly, leaving unavoidable brush marks.

(3) OIL OR VARNISH PAINTS

Celotex must be properly sized before application of oil or varnish paints. A satisfactory glue size may be made by dissolving 1½ lb. of chip or flake glue to a gallon of boiling water. The following prepared oil or varnish sizes have the advantage that they may be obtained ready mixed and properly proportioned for direct application to Celotex.

NAME	MANUFACTURER	CITY
Primer for Celotex	Devoe & Raynolds	New York City
Compo Seal	E. I. du Pont de Nemours & Co.	Wilmington, Del.
Special Primer No. 44	The Glidden Company	Chicago, Ill.
Fill-Coat	Benjamin Moore & Co.	Chicago, Ill.
Peel-Kill Pigment Primer No. 7851	Marietta Paint & Varnish Co.	Marietta, Ohio
Nepto-Seal	The Lowe Brothers Co.	Chicago, Ill.
Plasco Primer-Sealer	Pittsburgh Plate Glass Co.	Pittsburgh, Pa.
Tri-Seal	Sherwin-Williams Co.	Cleveland, Ohio

The best results are obtained if the Celotex is sanded lightly after the size coat has dried thoroughly.

(4) PLASTIC PAINT AND WALL COVERINGS

PREPARING CELOTEX—Before applying plastic paint or wall coverings, apply Celotex and reinforce all joints according to instructions in Specification No. 5, page 17.

PLASTIC PAINTS—The rough Celotex surface is recommended. Plastic paints are thick paints which can be textured by manipulating the brush or various tools to produce various textures and effects. They are divided into two groups—those prepared by the addition of water to a powder and those having a linseed oil base furnished prepared ready for use. Water base plastic paints (unless excessively alkaline) can be applied directly to unsized Celotex. Size Celotex for oil base plastic paints.

WALL COVERINGS—Use the smooth side of Celotex for applications of wall coverings. In addition to wall papers and canvas, fabrics such as Sanitas, leathers, and even thin plywoods and thin metal sheets may be applied. Wall paper may be applied over a lining paper if desired. If special requirements must be met, follow the manufacturer's standard recommended method of procedure.

(5) STENCIL DECORATION

Where a light touch of color is desired or where a means of accenting a design is sought, stencils are recommended. Border stencils are particularly attractive on Celotex interiors and are approved by leading decorators.

Stencil designs may be cut in oil paper or metal. They are held in position by hand or by thumb tacks while the color is applied with a stiff stencil brush. Colors ground in Japan are recommended. The Japan color paint should be thinned to the desired consistency with a mixture of six parts turpentine, three parts linseed oil, one part Japan drier. Stencils may be obtained locally. A booklet of attractive stencil designs may be obtained from the Ladies Home Journal, Philadelphia, Pa. for 10 cents, while the stencils themselves cost 15 cents each.

(6) MISCELLANEOUS DECORATIONS

Artistic decorative effects may be produced by carving the surface of Celotex, particularly in the case of large relief carving where detail is not required. A design is first laid out in pencil. Razor blades or sharp knives are then used to carve the Celotex.

Wallpaper Over Celotex

Celotex Texbord (Wood Veneer) *See next page*

SPECIFICATION No. 9 — INTERIOR FINISH

CELOTEX TEXBORD

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words in bracketed bold face type are selective.*

(1) FRAMING

Texbord should be applied to continuous surfaces only. It is not intended for direct application to framing or furring strips. In most instances Texbord will be applied to plastered surfaces, but if desired in new construction, a plywood backing, preferably ⅜ or ½ in. thick, may be substituted for plaster to receive the Texbord.

(2) MATERIALS

(2a) Interior finish shall be **[walnut] [mahogany] [avodire]** Celotex Texbord **[6] [9] [12]** inches wide by **[8] [10]** feet long. (Random widths recommended.)

(2b) Adhesive shall be Celotex Texbord Adhesive.

(3) APPLICATION

(3a) SELECTION OF GRAIN—If boards are applied to the wall all in one width, care should be exercised that they are applied random with respect to grain, so that no two adjacent boards will be a duplication of figure (grain) and shade.

(3b) ADHESIVE—Apply Texbord Adhesive to both lap joints of each individual board. On the 12 inch wide planks it is also advisable to add a strip of adhesive about 3 inches wide down the middle of the length of the plank and a corresponding strip on the wall. This same special adhesive is used in applying Texbord to the backing along inside and outside corners as shown in accompanying sketches. **Wherever Texbord Adhesive is used, it should be permitted to dry thoroughly (until no longer tacky to the touch) before the adhesive coated surfaces are brought together.**

NOTE: *Texbord Adhesive is supplied in two dissimilar liquids in individual cans, the contents of which should be stirred together immediately prior to use. Any glue-spreading brush about 2 inches wide is satisfactory for brushing the adhesive. The brush should first be washed in water and it should be dipped into the adhesive while wet to prevent gumming of the bristles. In using Texbord Adhesive, care should be taken to keep the brush completely immersed in the adhesive while it is not in the hand and at the end of the day it should be thoroughly washed in water and any particles adhering to the bristles should be combed out with a steel brush. One gallon of adhesive will take care of the joints of about 600 square feet of Texbord.*

Texbord Adhesive bonds when it is dry by bringing two coated surfaces together under pressure obtained by means of hammer blows on a padded block.

Beveled boards 16 inches long, as illustrated in cross section in Figures 1 and 2, are effective for facilitating the spreading of the adhesive on the laps. After the adhesive has been spread on the edges of a few boards, these should be set against the wall and when the edges of five to ten boards have been coated, the first boards are usually ready for nailing.

Texbord Adhesive is also required for inside and outside corners as illustrated in Figures 3 and 4. In this case it should also be spread on to both surfaces.

If, after brushing the adhesive, the boards cannot be applied to the walls for several days, the adhesive may be revived by wiping the laps with a cloth dipped in carbon tetrachloride or a fresh coat of the adhesive should be applied.

(3c) NAILING—For nailing Texbord to plaster or plywood, 1-inch No. 17 galvanized wire nails with flat heads should be used. The nails should be spaced about 6 inches apart, and they should be driven at an oblique angle. The nails are driven through the under half of the lap into the plaster and the nail heads are subsequently covered by the overlapping portion of the next board as illustrated in Figures 3 and 4. The overlapping edge is next given a blow with a hammer, placing a padded wood block with the padded side next to the joint and striking it at short intervals with firm hammer blows. The block of wood should be shifted up and down the joint until a blow has been given to the joint at short intervals not to exceed 2 or 3 inches.

NOTE: *When Texbord is installed on bases which will not receive and hold nails properly, the adhesive should be applied to the entire back surface of the Texbord and also the wall surface. The adhesive should also be used on the lap joints as previously specified. One gallon of adhesive will take care of about 150 square feet of Texbord applied in this manner.*

(3d) CORNER TREATMENTS—The method of treating inside and outside corners is illustrated in Figures 3 and 4. No supplementary mouldings or wood strips are required.

As application proceeds along the wall and into an inside corner, the last board is cut to width on the job so that it fits into the corner with a clearance of approximately $\frac{1}{16}$ inch. To proceed on the surface at right angles thereto, the next board is then marked by scribing and is cut to fit against the surface of the previous board. *(Continued on page 27)*

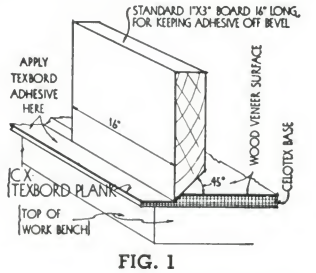


FIG. 1

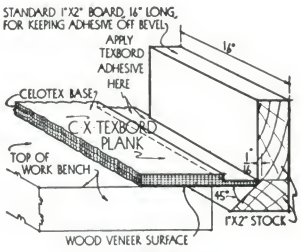


FIG. 2

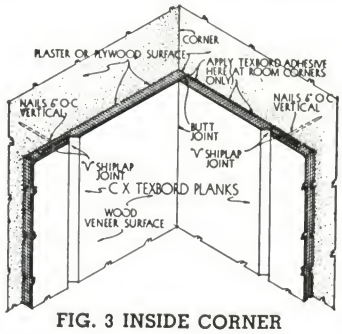


FIG. 3 INSIDE CORNER

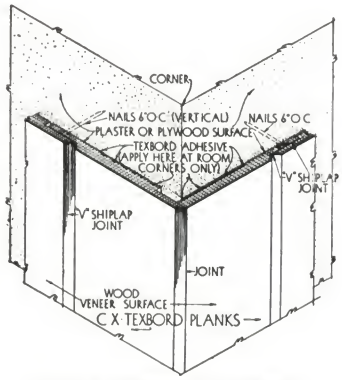


FIG. 4 OUTSIDE CORNER

A PHOTOGRAPH IN NATURAL FULL COLOR

CELOTEX TEXBORD

Celotex Texbord, an actual fine cabinet wood veneer laminated to a Celotex Cane Fiber base, is an easily installed material of extraordinary richness and beauty. In a choice of beautifully grained veneers (see next page), Texboard is the obvious medium for achieving handsome wood-finished interiors at reasonable cost.

CELOTEX TEXBORD is shown at the right in full colors—mahogany, walnut, and avodire. All Texbord products are made of the finest genuine cabinet wood veneer, cut to procure the most beautiful grain—adhered to Celotex Cane Fiber Board—delivered to the job with a beautiful waxed finish, ready to apply—manufactured in 6, 9, and 12 in. widths; 8 and 10 ft. lengths; ¼ in. thick—shiplapped joints—apply directly to any continuous surface with adhesive and nails—no nail heads show—curve around moderate arches—permanent, economical.

CELOTEX HARD BOARD products, shown below in actual color, give lifetime satisfaction wherever a hard surface is desired. Top to bottom, Celotex Hard Board, Tempered Hard Board, Studio Board, Black Tempered Hard Board, Panel Board, and Hardboard Tile. Also manufactured, but not illustrated, is a Green Tempered Hard Board.

MAHOGANY

WALNUT

AVODIRE

SPECIFICATION No. 9 CELOTEX TEXBORD (Cont'd from Page 24)

This cutting should be so that the overlap of the Texbord unit is removed, leaving the underlap. Application then proceeds one board after another as before.

In working toward an outside corner, similar procedure is followed. The fill-out is loosely placed in position so that it can be marked by scribing and then trimmed to allow approximately ⅛ inch overhang. A full Texbord unit is then applied to the surface at right angles thereto in such a manner that the overlap edge will rest against and conceal the cut edge of the previous unit. This detail is shown in Figure 4.

Corners can also be treated by covering them with wood strips or mouldings overlaid and nailed in place, but the method just described and illustrated in Figures 3 and 4 is preferred.

(3e) FITTING TO TRIM—In fitting Texbord to existing trim, baseboard, and cornice moulding, it is merely necessary to cut the board to such dimension that it will make a tight butt joint. Texbord is sufficiently thin so that this procedure can be followed without disturbing the trim which exists in finished buildings. In the case of new buildings, it is possible to make application of Texboard in such a manner that the trim, baseboard, and cornice moulding will overlay the Texbord.

(3f) TEXBORD MOULDINGS—Mouldings of walnut, mahogany, and avodire where so indicated shall be made up of Texbord mouldings, oil-waxed to a soft lustre, obtainable from The Celotex Corporation. Where special trim is required this may be obtained in the same woods from millwork manufacturers.

(4) FINISH

Celotex Texbord is oil-waxed to a soft lustre and requires no further decorative treatment. Care shall be exercised in erection to preserve this original lustre.

CELOTEX HARD BOARD PRODUCTS

Celotex Hard Board Products, six of which are shown in color on the page opposite, should not be confused with Celotex Cane Fiber Insulation. Designed for different uses, they are denser and have no insulation value. They include several varieties of sturdy, serviceable boards, especially treated to resist moisture and warping. They are unusually strong, tough and resistant to abrasion.

Celotex Hard Board products are used for wall paneling, wainscoting, partitions, and may also be cut on the job into attractive border overlays, friezes and ornaments. Celotex Hard Board and Panel Board are preferable for applications where the material is subject to abrasion and severe usage.

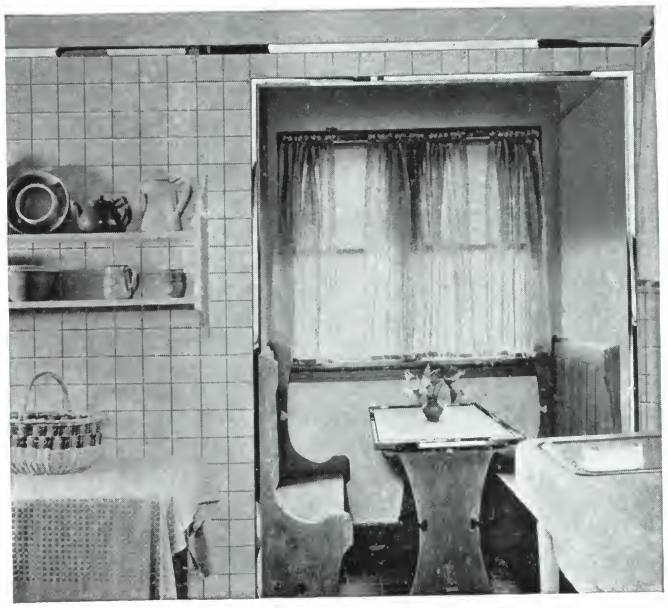
Particularly suited for interior decoration are Hard Board (plain, tempered, and tile), Panel Board and Studio Board.

For sizes and further and more specific uses of these and other miscellaneous wallboard products consult table on Page 5.

All Hard Board products can be sawed, cut or drilled with standard woodworking tools. They may be applied by nailing to framing or furring (12 or 16 inches on center), or to a continuous wood backing, or by cementing and nailing to a suitable base such as sound plaster.

For complete specifications for any product and any particular use write to The Celotex Corporation.

Hard Board Tile as a Bath Room Finish



Walls Surfaced With Hard Board Tile

CELOTEX ROOF INSULATION

Roof insulation applied over the various types of roof decks under Built-up Roofing is purchased and applied by the roofing contractor in one continuous operation.

The complete detailed specifications covering the application of Celotex Roof Insulation will be found in the Celotex Built-up Roofing Catalog—see Sweet's File Index.

Protection Board

CELOTEX PROTECTION BOARD

DESCRIPTION—Ferox-treated Celotex Cane Fiber Insulation Board impregnated with selected bitumens by a special process.

SIZE, THICKNESS, ETC.—Units are unpainted, 24½ x 49 in. in area, ¼ and ½ in. thick. Edges are square.

RECOMMENDED USES—Celotex Protection Board has two (2) major uses—namely, as cushioning under wood block flooring to provide resiliency and to reduce drum effect, and as protection of waterproofing courses. For Waterproofing Application, see Celotex Roofing catalog.

Waterproofing courses of saturated felt and asphalt or pitch must be carefully safeguarded against mechanical injury until they are permanently enclosed by masonry or some other protective construction. Such membranes are constructed to resist hydrostatic pressures; if they leak at any point, water will penetrate them and their usefulness ceases. A heavy investment may easily be destroyed by a small puncture in the membrane. Celotex Protection Board, applied in pitch or asphalt to the surfaces to be protected, provides an economical method of shielding such membranes from mechanical abrasion or damage.

APPLICATION SPECIFICATIONS—UNDER WOOD BLOCK FLOORS

(1) OVER MASONRY SUB-FLOORS

(1a) Preparation of Floor—The surface over which the Celotex Protection Board is to be installed shall be clean, dry, level concrete or other masonry floor. Depressions in the concrete or masonry shall be filled with a compound consisting of emulsified asphalt, Portland cement and sand, and allowed to set and dry.

Floors subjected to hydrostatic pressure should be waterproofed by means of a membrane waterproofing course applied over the concrete slab.

(1b) Application of Celotex Protection Board—Protection Board may be embedded in either hot asphalt or cold asphalt compound (asphalt emulsions are not recommended for this purpose). Where hot asphalt is used, concrete should first be primed with an asphalt primer and the Protection Board embedded in a liberal mopping of hot asphalt. Where asphalt compound (preferable) is used, trowel compound directly on to masonry floor to a thickness of $\frac{1}{16}$ to ⅛ inch as required to present a plane surface and embed Protection Board therein. All joints shall be carefully pointed and wiped clean of surplus compound. The Celotex shall be carefully fitted together and all joints staggered.

Protection Board may be formed to moderate projections in the masonry floor by gouging the back surface with a linoleum knife.

(2) OVER WOOD SUB-FLOORS

(2a) Application of Celotex Protection Board—Nail the Celotex Protection Board directly to wood subfloor, using 1 inch standard galvanized roofing nails. Space nails 9 inches apart down the center of each unit and 6 inches apart along, and 1 inch from edges.

(3) APPLICATION OF FLOORING—The wood block flooring should be applied over the Protection Board in bituminous compound in accordance with the flooring manufacturer's specifications.

Wood Block Flooring being applied over Celotex Protection Board

Celotex Protection Board applied as protection course on foundation of State Parkway Bridges, New York City

CELOTEX MIL-FLOR

DESCRIPTION—Ferox-treated Celotex Cane Fiber Insulation Board impregnated with selected bitumens by a special process. Has greater density and toughness and is less resilient than Celotex Traffic Top (described in Celotex Built-up Roofing Catalog).

SIZE AND THICKNESSES—Units are primed, ready to lay, unpainted, 24 x 48 in. in area, ¼ and ½ in. thick. Edges are square.

RECOMMENDED USES—Celotex Mil-flor is exceptionally well adapted for medium duty traffic surfaces in factories.

DO NOT USE—Where floors are subjected to excesses of oil, animal fats and greases, or in heavy industry plants where floors are subjected to severe abuses from abrasion by heavy machinery parts or heavy factory trucks with narrow steel wheels.

CELOTEX VAPORPROOFED LOW TEMPERATURE INSULATION

Protection against water vapor and moisture is essential in cold storage installations whether the material be fibrous, cellular, granular or of any other type of porosity. For years past efforts have been made to seal insulation during application with hot asphalt or plaster. VLTI is installed and served by approved applicators.

FACTORY SEALED—Each unit of Celotex VLTI is factory sealed by a special process far more effective than hand-labor methods on the job—the insulation receiving additional protection from the asphalt used in application. Furthermore Celotex VLTI, like all Celotex Cane Fiber products, is manufactured under the Ferox Process (patented) and therefore effectively resists damage by dry rot, fungus growth, and termites.

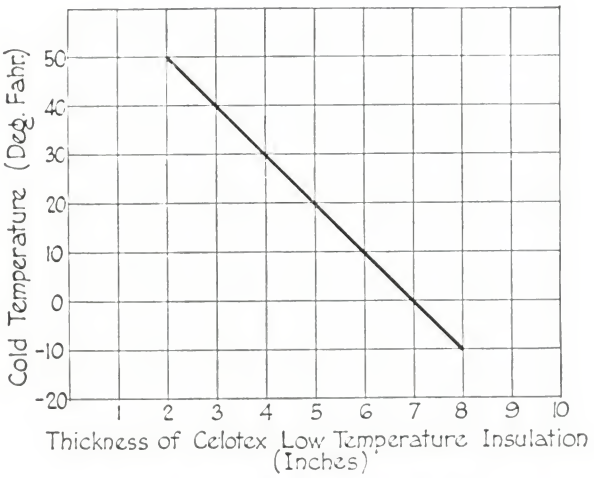
Because each block is isolated from every other block, should damage occur at a given point, moisture cannot be communicated throughout the insulated structure. The high efficiency requirements of cold storage insulation are fully met by Celotex VLTI—this material having low conductivity, structural strength, resistance to damage and abuse and being readily applied. Its conductivity, based on Armour Institute tests, is 0.30 B.t.u. per hour, per square foot, per degree Fahrenheit, per inch thickness.

Celotex VLTI, because of the factory seal, is particularly adapted for use in humidified residences in combination with masonry construction. The VLTI is installed between two masonry walls of hollow tile, brick, cinder or concrete blocks or monolithic concrete, or combinations of these materials.

SIZES—The standard sizes of Celotex VLTI are 12 inches x 36 inches and 18 inches x 36 inches; half-size blocks, 9 inches x 36 inches and 18 inches x 18 inches, for breaking and staggering joints, are also available. Thicknesses are 1 inch, 1½ inch, 2 inch, 2½ inch, 3 inch, 3½ inch, and 4 inch.

For Specifications, Write for Booklet No. 734B.

Binnewater Ice Co., Kingston, N. Y.: 10,878 feet of VLTI



FLEXCELL EXPANSION JOINT

DESCRIPTION—Flexcell Expansion Joint is made of Celotex Cane Fiber Board impregnated and coated by a patented process with a durable protective asphalt. Flexcell has been successfully used in major projects since 1929 as evidenced by the following installations:

Twelve leading State Highway Departments for their highway and bridge construction.

Sidewalks of Rockefeller Center and Knickerbocker Village in New York, two of the major building projects of recent years.

Two of the world's largest bridges, the Triborough Bridge joining Manhattan, Bronx and Queensboro, and the San Francisco-Oakland Bay Bridge.

The new Chicago Lake Shore Outer Drive.

Chicago Park District and WPA for sidewalks, curbs, gutters, pavements, retaining walls, swimming pools, and other uses.

FLEXCELL IN APPLICATION
Concrete Sidewalk with Flexcell Expansion Joint

ADVANTAGES—The reasons for Flexcell's success and increasing demand is summarized below.

(1) Has proven its durability.

(2) Will not extrude when placed under compression.

(3) Is resilient and re-expands when released from compression.

(4) Due to rough surface adheres to concrete.

(5) May be easily compressed.

(6) May be easily cut with hand or power saw.

(7) Retains its shape while handling.

(8) Its light weight permits quick and workmanlike installation.

(9) May be stored indefinitely without deterioration or change of shape.

(10) Gives neat finished joint and requires no trimming.

RECOMMENDED USES—For expansion joints in concrete work, such as streets, sidewalks, curbs and gutters; retaining walls, bridges, viaducts; airport runways and hangars; stadiums, swimming pools, private concrete work adjoining city sidewalks or curbs; service stations, tennis courts, drive-in markets, loading platforms, stadiums; around bearing columns extending through concrete floors; steel joists at bearing on masonry walls; concrete and tile roofs; concrete houses; glass block wall construction; machine cushioning.

INSTALLATION—The joint sections shall be cut to the exact cross section of the concrete in which it is to be installed and shall be held in accurate position and alignment in a suitable manner while the concrete is being poured. When carrying or placing, the material should be handled on edge to minimize danger of breaking. In sidewalk, curb and gutter, and general concrete slab construction, Flexcell may be placed so that the exposed edge of joint will be flush with the surface of the slab, and the concrete neatly finished off where it contacts the joint filler. No concrete should extend over or on the joint filler.

SUGGESTED SPACING AND THICKNESS OF FLEXCELL

When expansion joints are placed at approximate intervals of	10′ to 20′	20′ to 30′	30′ to 50′	50′ to 70′	70′ to 100′
Suggested thickness of joint filler should be.....	¼″	⅜″	½″	¾″	1″

CELOTEX CEMESTO

DESCRIPTION—A completely fabricated, fire and moisture resistant insulating wall unit, consisting of Ferox-treated Celotex Cane Fiber Insulation Board surfaced either one side (S1S) or on both sides (S2S) with cement-asbestos. It can be nailed, drilled, etc. with regular carpenter's tools.

SIZES AND THICKNESSES—Units are 4x4 ft., 4x6 ft., 4x8 ft., 4x10 ft., 4x12 ft. in area, ½, 1, 1½ 2, 3 and 4 in. thick Celotex surfaced one or both sides with cement-asbestos ⅛ in. thick.

RECOMMENDED USES—As an integrally finished interior and exterior wall or interior partition material. Also, industrially, for low temperature dry kilns, air-conditioned rooms, air ducts, factory partitions, etc.

APPLICATION SPECIFICATION DATA

(1) APPLICATION OF S1S CEMESTO TO WOOD FRAMING—Cemesto surfaced one side requires adequate fastening to framing through the center of the board. Suitable framing consists of standard wood framing spaced 12 inches or 16 inches on center with headers at horizontal joints, or 24 inches with headers at horizontal joints and intermediate headers not over 48 inches apart. Nail Cemesto to framing with nails spaced approximately 8 inches on center on intermediate nailing bases, 4 inches on center around edges. Nail first to intermediate framing, then around edges. Use common nails of length approximately twice the thickness of Cemesto. Use galvanized or coated nails for exterior application and where high humidities are present. See Figures 1, 2 and 3 for typical details.

(2) APPLICATION OF S1S CEMESTO TO STEEL FRAMING—Spacing of framing should be same as in paragraph (1). Apply Cemesto by bolting to framing, with bolts spaced approximately 12 inches on center on intermediate bearings and around edges. If bolts with countersunk heads are used, the facing of Cemesto should be countersunk. When battens are used over joints, bolt through batten, Cemesto and framework. Tighten bolts to a snug fit but not so tight as to compress Celotex and indent the surface.

(3) APPLICATION OF S2S CEMESTO TO WOOD FRAMING—In addition to nailing to standard wood framing as described above in paragraph (1) for S1S, Cemesto surfaced two sides may be used where supports are placed only along the edges. This application permits variations from standard framing construction. For example, 1½ inch S2S Cemesto may be applied as a "curtain wall" using 2x4 framing spaced 4 feet 1⅞ inches on center with additional blocking to provide stiffness and bring flush on one surface. The joint is then covered with a batten and caulked. See Figure 4. When supported only at edges, wood or metal strips should be used over the joints, nailed through the Cemesto to the framing, thus providing a continuous support. Headers should be provided at horizontal joints. The maximum span recommended for ½ inch S2S is 2 feet; 1 inch S2S and greater thicknesses may have spans up to 4 feet. A bearing surface of at least one inch should be provided. As this application does not permit development of the full bracing strength of Cemesto used as sheathing, the framing should be braced to increase its rigidity.

(4) APPLICATION OF S2S CEMESTO TO STEEL FRAMING—Steel framework should be erected with generally the same spacing as in paragraph (1) for wood framing, and of the proper size to carry the particular structure. Secure the Cemesto by bolting through metal battens to the framework. In many applications, instead of using battens, the Cemesto may be held in place between structural shapes. For interior partitions, a splined joint with ornamental bolts and washers approximately 30 inches on center eliminates need of battens in assuring proper alignment. Provision should be made in the framework for supporting doors, window and equipment by the framework, independently of the Cemesto. See Figures 5 and 6.

(5) JOINT TREATMENT—Generally Cemesto joints are covered with strips of asbestos cement, wood or metal. If desired, joints may be left plain, slightly beveling or rounding the edge of the face with a plane or sandpaper. For exterior joints and for interior joints in rooms where high humidities prevail, use a gasket of roofing felt or asbestos felt under the batten or caulk joint and batten with caulking compound and gun.

(6) FINISHING—It is not necessary to paint Cemesto when used as exterior finish. The cement-asbestos surface of Cemesto demands special precautions in painting. Limeproof first coaters should be applied before painting with lead and oil paints. Water paints for interior use may be applied directly to Cemesto. Paint suitable for application over Portland cement and aluminum paints may also be applied direct. For unusual conditions of acid fumes, special acid resistant paint should be used. Leading paint manufacturers can recommend their products best adapted for painting cement-asbestos surfaces, or The Celotex Corporation will assist in any problem.

See Page 32 for Details

APPLICATION OF CEMESTO

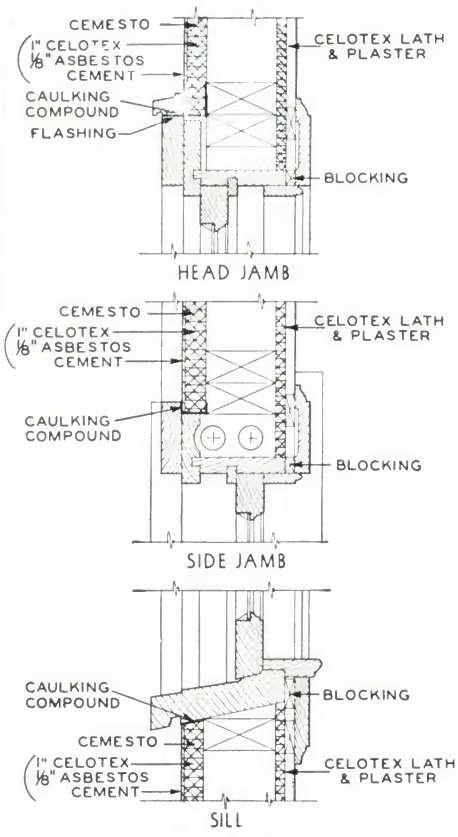


FIGURE 1

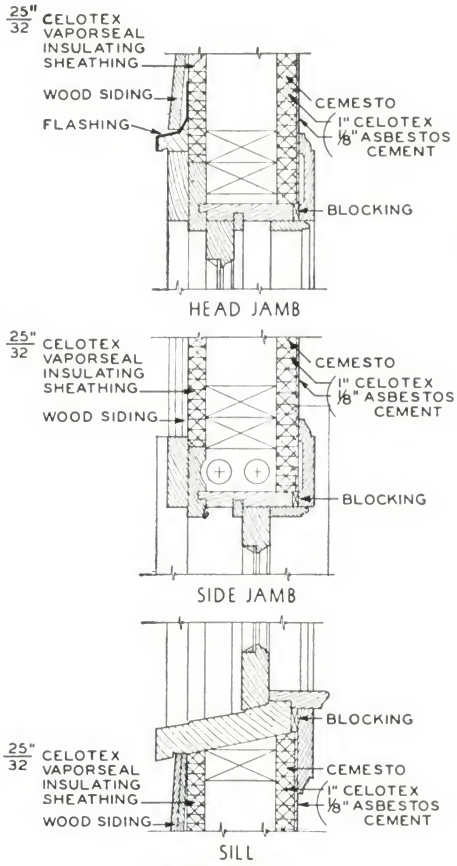


FIGURE 2

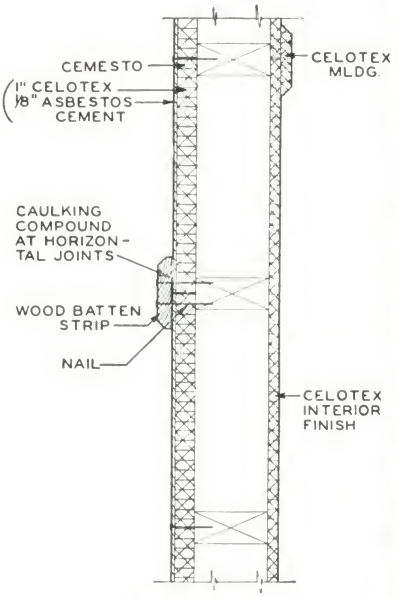


FIGURE 3

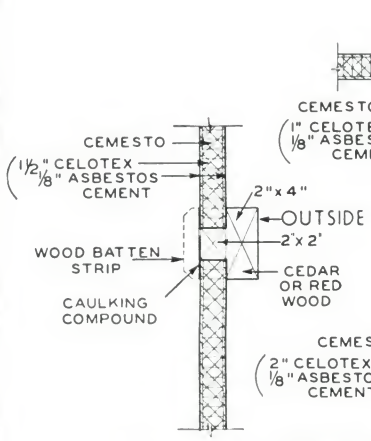


FIGURE 4

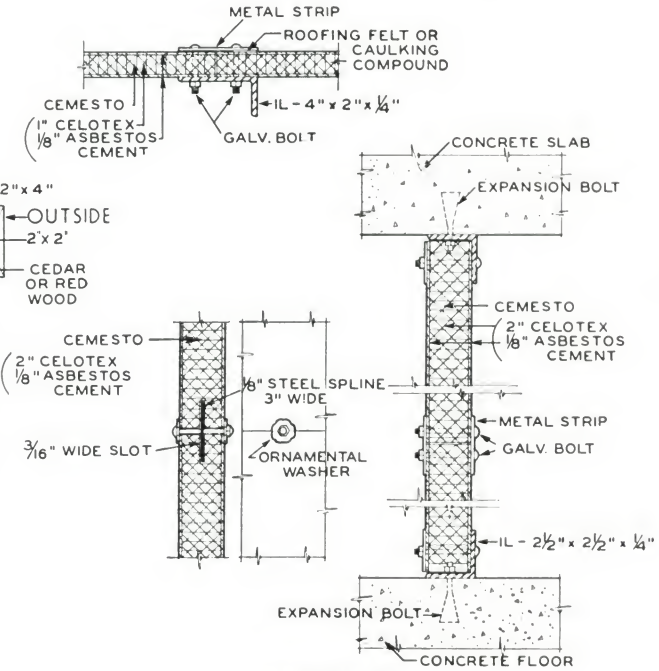


FIGURE 5

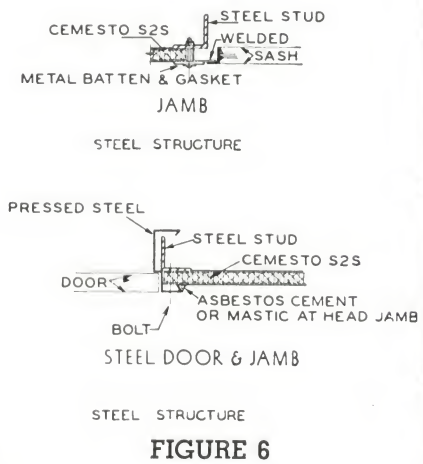
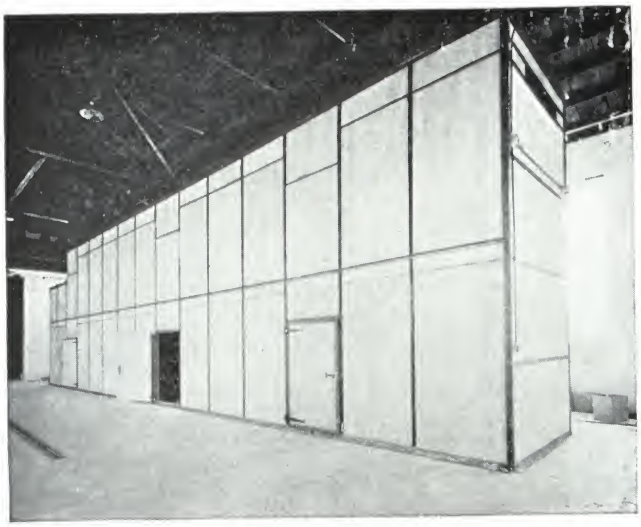


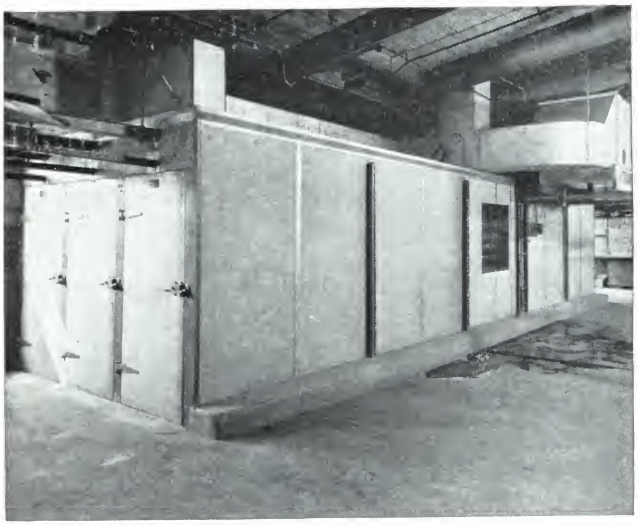
FIGURE 6

Additional Details Furnished on Request

TYPICAL CELOTEX CEMESTO APPLICATIONS



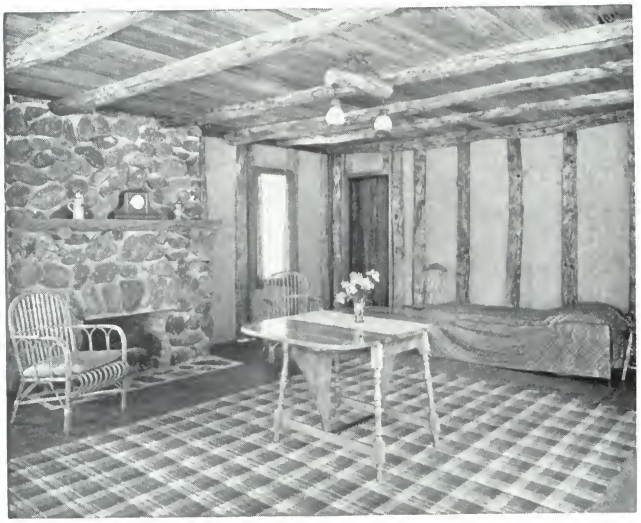
Dryer—Valley Forge Chemical and Manufacturing Company, King of Prussia, Pennsylvania



Walls and Ceilings of This Bakery Dough Room and Chamber are Cemesto Applied to Steel Frame

Bakery Dough Room—Solid Partition Walls of 2-in. S2S Cemesto, With Steel Batten Strips Bolted Through to Metal Angles

At Right: Passageway Has Walls of 1-in. S2S Cemesto



Wall Formed by 1-in. S1S Cemesto Between Half-Round Logs, 24 in. o.c.; the Celotex Surface is the Interior Finish

Cemesto Used as Exterior Finish
Architect: Homer Harper, Benton Harbor, Mich.

ADAPTABILITY

THERMAX FIRE-RESISTING STRUCTURAL INSULATION

DIVERSIFIED ADAPTABILITY

THERMAX — DEMONSTRATED PRACTICABILITY—The material now has world-wide distribution. It has been used extensively in continental Europe **since 1918** under the trade name of **Heraklith,** and there has won recognition and ready acceptance in building industry.

This long period of actual demonstration under varied building and climatic conditions from Iceland to tropical Palestine has established the unique and practical characteristics of this insulation. In the United States, Thermax has been made, marketed and used successfuly for over eight years.

FRAME BUILDING INSULATION—

(1) As Sheathing and Roof Boarding—The full one (1) inch or two (2) inch thickness of structural Thermax as insulating slabs is an economy. The added fuel savings and comfort more than compensate for any slight added cost. The fire-resisting feature alone should influence its choice. Structurally it is an ideal sheathing and roof boarding material.

As an exterior stucco base it is practically inert so far as contraction and expansion are concerned and the bond between the stucco and the Thermax surface is equal to that of the best masonry stucco base. Two (2) inch Thermax is recommended for stucco base because the effect, using standard brick veneer frames, is the same as in a masonry building with a masonry reveal (see detail, page 39).

(2) As Interior Plaster Base—On walls and ceilings it is an ideal fire-resisting and sound-deadening plaster base—strong bond, no expansion or contraction. On basement ceilings it reduces the fire hazard to a minimum.

(3) As a Light Weight Floor Slab—Where a composition floor (linoleum, asphalt tile, rubber tile, etc. is used, Thermax (3 in. thickness) finished with a 1 in. minimum thickness of Portland cement mortar 1 : 3 mix gauged with approximately 10% of hydrated lime reinforced with wire mesh and troweled smooth, provides the structural sub-floor or base for these materials (maximum joist spacing 24 in. o.c.). It is also an ideal base for ceramic and other finishes.

Beside the benefits of heat insulation, sound deadening is an inherent quality of Thermax.

INDUSTRIAL ROOF DECK INSULATION—Thermax units are high in insulation and sound absorptive values in the three thicknesses marketed—1, 2, and 3 in.—and where required **over wood, concrete or steel roof decks** are laid in one operation in the required thickness—a labor economy. Cement topping or a layer of Celotex Roof Insulation is recommended over Thermax as a base for built-up roofing.

FIRE-RESISTING, INSULATING STRUCTURAL ROOF SLABS—Used as **precast roof slabs** in conjunction with steel roof framing, Thermax (2 and 3 in. thick) is easily erected. The exposed underside should be painted with aluminum or light reflecting cold water or oil paint, producing an efficient, attractive, and inexpensive acoustical treatment for auditoriums, gymnasiums, armories and other structures where sound quieting is desired.

FIRE-RESISTING, INSULATING STRUCTURAL FLOOR AND CEILING SLABS—For use as **structural floor slabs** in residential construction in conjunctiion with **Steel Joists** and **Junior Beam** or **Steel Deck Construction.** Light weight, structural strength, definite fireproofing, heat and sound insulation and an ideal base for cement, tile, terrazzo, and similar floor finishes are the salient characteristics. (See item 3, Frame Building Insulation.

Used as a 2 in. thick **fire-resisting ceiling slab,** it adds a practical and definite fire protection to those light steel constructions, hitherto difficult to accomplish. It provides a perfect plaster base or if painted only (unplastered), it is highly sound absorbent.

FIREPROOF PARTITIONS (NON-BEARING)—

(1) 2 in. Thick with Steel Studs—Fulfills 1 hour fireproofing requirements, using 1 in. thick Thermax units clipped between 1-in. steel channels, plastered both sides (2 in. thick finished). These partitions are erected rapidly, dry out quickly, are light in weight and stable.

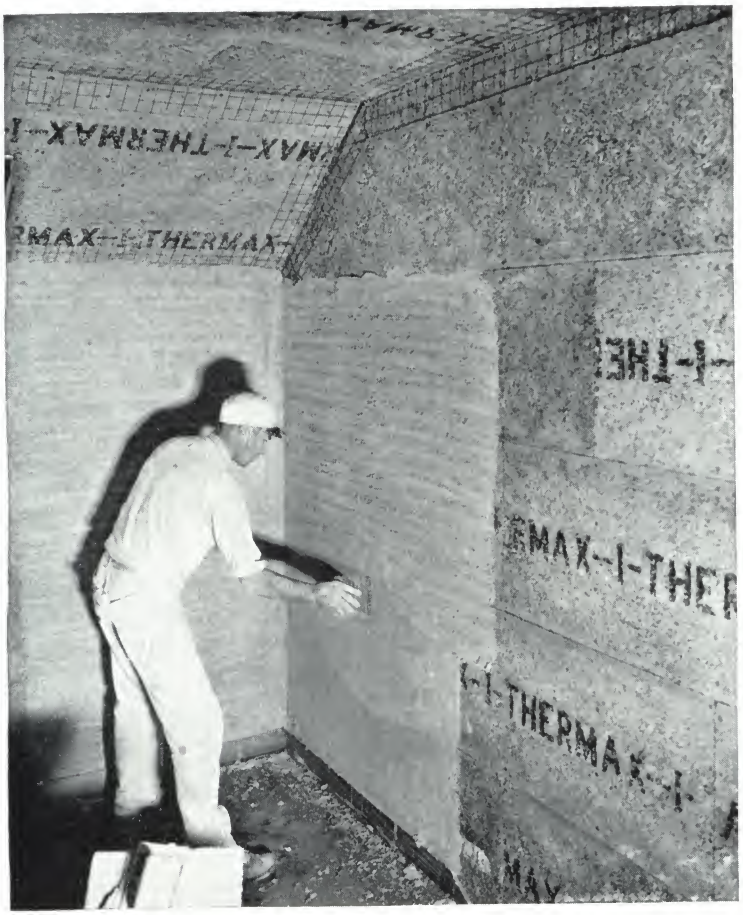
(2) 2 in. and 3 in. Thick Partition Blocks—Fulfills 1 and 2 hour fireproofing requirements, respectively. The Thermax units 2 and 3 in. thick x 20 in. wide x 32, 48 or 64 in. long are easily handled due to their light weight. They are quickly erected with mortar (Portland cement, gypsum or lime) like gypsum or clay tile partition blocks, plastered both sides, finishing 3 in. and 4 in. thick, respectively. Cutting and fitting are easily accomplished with ordinary tools.

THERMAX PLANKS—Thermax slabs 2 and 3 in. and 20 in. wide may be obtained on special order in ceiling height lengths. Easily and rapidly erected with clips and plastered (no studs).

CONCRETE FORMING—Thermax when used in forming of exterior concrete walls, floors, or ceiling provides fire-resisting insulation, is an excellent plaster base or may be left exposed for acoustical treatment.

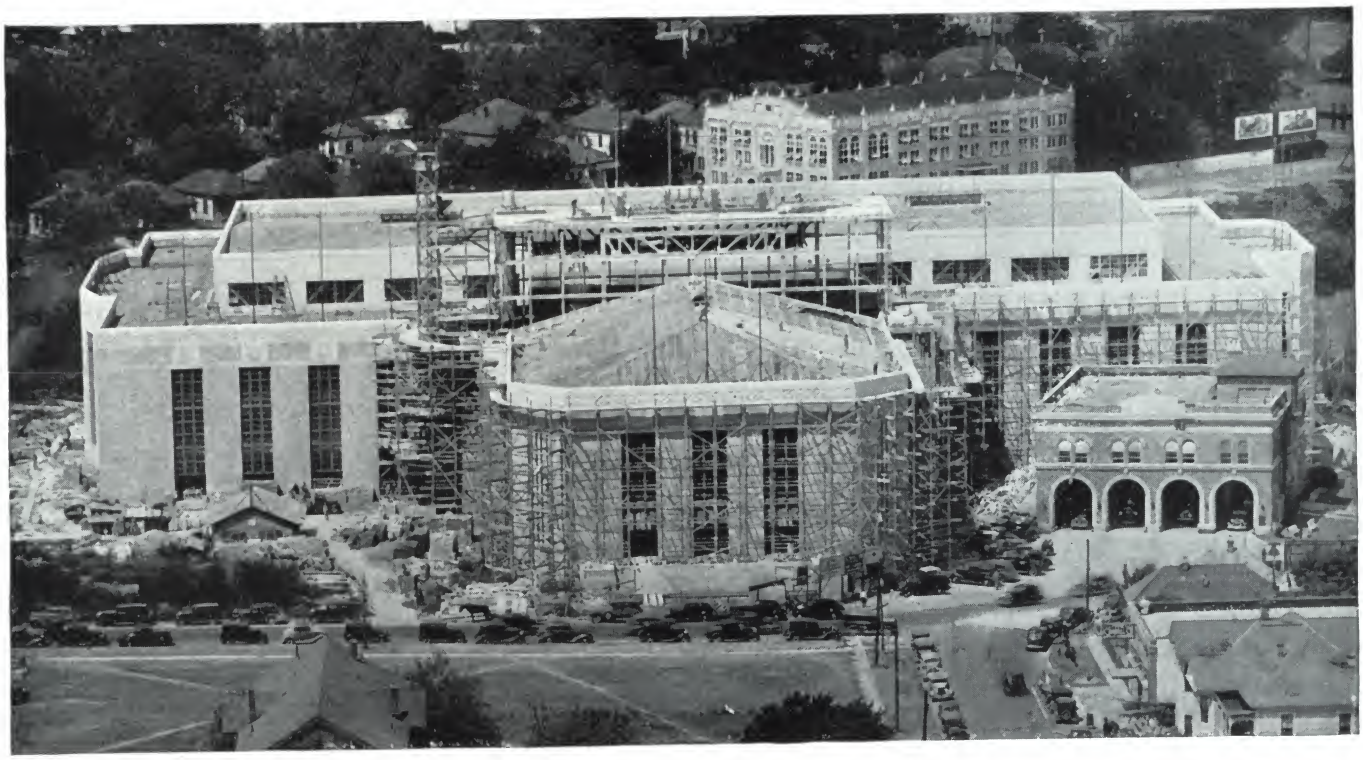
Form bracing recommendations are:

1 in. Thermax with wood forming.
2 in. Thermax with 8 in. spacing of supports.
3 in. Thermax with 12 in. spacing of supports.



20 HOUSES, BONNEVILLE DAM, BONNEVILLE, ORE.
One-Inch Thermax Fire-resisting Insulation
Used as a Plaster Base

HOTEL DARLING, WILMINGTON, DEL.
Thermax Fire-resisting Insulating Slabs
for Floors, Walls, and Ceilings in Fireproof Construction



SAM HOUSTON COLISEUM, HOUSTON, TEXAS
Insulated Roof Deck—300,000 Board Feet of 3-in. Thermax Slabs

Features

MANUFACTURING PROCESS

RAW STOCK—Thermax is made by combining two basic materials—long, tough wood shreds which are completely coated with fire resisting cement. The cellular wood fibers alone have an established high insulation value, which is increased by the air containing interstices between the fibers when these are interlaced and cemented together.

DETAILS OF PROCESS—Thermax is produced in one continuous mechanical operation that shreds the timber into long fibers; passes these fibers through a binding emulsion of fire resisting cement; rolls and forms this mass into boards or slabs exactly 1 in., 2 in., and 3 in. thick by 20 in. wide and dries and cuts the product into standard lengths.

PHYSICAL CHARACTERISTICS · ADVANTAGES

TESTS—All data is substantiated by standard tests conducted by recognized authorities: Underwriters' Laboratories, Inc., U. S. Bureau of Standards, Columbia University, Massachusetts Institute of Technology, Pittsburgh Testing Laboratories, Riverbank Laboratories, Inc., etc.

SIZES—

Thicknesses—Thermax is made 1, 2, and 3 in. thick. An axiom of insulation efficiency is that a sufficient thickness of insulation must be used. The outstanding advantage of Thermax as an insulating material is the greater thickness combined with structural strength at lower cost.

Area—Thermax in each thickness is made 20 in. wide x 32, 48, 64, 72 and 96 in. long. Special lengths up to 9'0" can be furnished on request.

WEIGHT—

1-in. Thermax—2.2 lbs. per sq. ft. (approx.).
2-in. Thermax—4.4 lbs. per sq. ft. (approx.).
3-in. Thermax—6.6 lbs. per sq. ft. (approx.).

FIREPROOFING—Thermax Passes Rigid Fire Tests. It has been Rated by Underwriters' Laboratories and Re-examination Service is Maintained.

Thermax blocks laid up with mortar for non-bearing partitions are approved for use in fireproof construction by the Boroughs of the City of New York as well as by the Building Departments of the leading cities in the United States and Europe and are rated without insurance penalty.

Thermax is approved by building departments as fire retardant trim in fireproof construction when left exposed for acoustical treatment.

3-in. Partitions—Thermax 2-in. thick blocks laid up with mortar, plastered each side with ½ in. of plaster, satisfactorily passed the fire endurance and fire hose stream tests at the Underwriters' Laboratories at Chicago and is rated 1 hour incombustible for non-bearing partitions in fireproof construction.

4-in. Partitions—Thermax 3 in. thick blocks laid up with mortar, plastered each side, have passed the 2¼ hour fire endurance and hose stream tests in accordance with the current specifications of the American Society for Testing Materials. (Test conducted by the U. S. Bureau of Standards.)

The 3 in. plastered (4 in. finished) Thermax non-bearing partitions have passed the 1 hour fire endurance and hose stream tests required by the Building Departments of the Boroughs of the City of New York. (Tests conducted by Columbia University.)

2-in. Partitions—1-in. Thermax Slabs, between steel studs 20 in. on center, plastered ½ in. each side, successfully passed the Fire Endurance and Fire Hose Stream Test for non-bearing partitions at the Los Angeles Testing Laboratory, for a one hour rating.

THERMAL CONDUCTIVITY—The thermal conductivity of Thermax Fire-resisting Insulation is slightly higher than other insulation boards and fills. However, Thermax combines in one economical building slab, 1, 2, or 3 inch thick, the desirable qualities of thermal insulation, structural strength, and fire-resistance.

The thermal conductivity of Thermax established by Prof. J. C. Peebles, Armour Institute (flat plate method) is:

1 in.—0.458 B.t.u. per hour, per sq. ft., per degree F.
2 in.—0.229 B.t.u. per hour, per sq. ft., per degree F.
3 in.—0.153 B.t.u. per hour, per sq. ft., per degree F.

SOUND ABSORPTION COEFFICIENTS—When Thermax is left exposed, such as the underside of a roof deck or a suspended ceiling, it provides high sound absorption efficiency. Tests made by the Riverbank Laboratories of Geneva, Illinois, gave the following coefficients:

Mounting	Coefficients					Noise Red. Coef.
	128	256	512	1024	2048	
1-in. Thermax, painted with oil-base paint, nailed to 1 x 2 in. wood furring 16 in. O. C.	.11	.17	.49	.68	.63	.50
1-in. Thermax, painted with oil-base paint, nailed to 1 x 3 in. wood furring 18 in. O. C. and filled between furring with 1 in. mineral wool.	.45	.69	.81	.64	.64	.70
2-in. Thermax, painted with oil-base paint, cemented to plasterboard, considered equivalent to laying in concrete form.	.21	.44	.85	70	.72	.70

NOTE: When Thermax is left exposed for sound absorption treatment, it is recommended that it be painted in order to obtain a uniform color. The sound absorption efficiency of Thermax is not noticeably affected by usual painting.

SOUND INSULATING PARTITIONS—Thermax partitions when plastered have exceptional value for sound deadening or sound isolation purposes.

MOISTURE RESISTANCE (CAPILLARY)—With one edge immersed in water, moisture in four (4) days rises to an average of but 3 in. in the slab. No further rise occurs for the next six (6) days. After drying, Thermax has the same strength as it had originally (University of Washington test). Non-absorption not only is essential to sanitation but to insulating efficiency.

STRUCTURAL STRENGTH — Independent laboratory tests determine that Thermax fulfills all practical requirements for roof decks.

Slabs placed on flat supports spaced 24 in. or 16 in. o.c. and a central load applied over 1 in. x 3 in. plate in increments up to ultimate failure, deflections being measured and corresponding loads recorded.

The results of these tests showed that the average ultimate load per sq. ft. for 3 in. Thermax at 24 in. span between supports is 345 lbs., and for 2 in. Thermax at 16 in. span is 500 lbs. per sq. ft. (for complete table of tests, see page 53).

Impact—A 1 in. topping of Portland cement mortar was applied on top of 2 in. thick Thermax blocks. Samples were kept moist for one week, then thoroughly dried. The concrete topping was then subjected to 20,000 blows of 600 lbs. per sq. in. concentrated at one point. There was no cracking of the concrete topping or loosening of the bond between the concrete and Thermax slab (University of Washington).

FIRM ROOF FOUNDATION—Where used as structural roof slabs or as insulation over roof decks, Thermax topped with Portland cement mortar or a layer of Celotex Roof Insulation provides a firm surface as foundation for the application of built-up finished roofing.

PORTLAND CEMENT STUCCO AND PLASTER BOND—(Test conducted by Columbia University.) Sample Thermax Boards 1 in. thick, selected at random from stock, were securely attached to wood blocks furnished with exposed pull rings. The Thermax surfaces of each specimen, thus prepared, were bonded together with standard gypsum plaster. A series of six tests were made on slabs thus bonded resulting in an average of 317 lbs. per sq. ft. Failure in each case occurred by separation in the wood fibers. See also impact test above.

> **NOTE**: *60 lbs. per sq. ft. is the accepted standard for bonding strength for gypsum plaster and 200 lbs. per sq. ft. for portland cement, poured in place (U. S. Government Specification).*

STERILITY—Made of clean, shredded wood, with each strand coated with high temperature cement Thermax is odorless and affords no food value to attract insects. The cement coating successfully prevents attack by rodents.

TERMITE PROOF — Thermax (under the name Heraklith) has been used under close observation for many years in tropical Europe in regions infested by the white ant or termite. No instance of termite damage has ever been discovered. The hard, refractory cement coating of every wood shred apparently resists termite attack.

CHEMICAL ANALYSIS — Assurance that there is no detrimental corrosive effect when Thermax is erected in contact with steel is given in the following chemical analysis showing negligible magnesium chloride. (Test by Penniman and Browne, Consulting Chemists, Baltimore.)

The water soluble content of Thermax **consists largely of alkaline material** and is but 4.39% of the total weight. The chemical arrangement of the water soluble cement is as follows:

Magnesium sulphate	92.71%
Magnesium chloride	1.48%
Calcium hydrate	5.80%

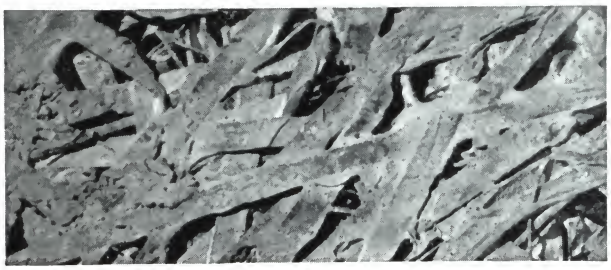
DURABILITY—FUNGI PROOF—In addition to being moisture resistant, the cement coated wood shreds in Thermax are definitely sealed against attack by fungus growth. Under actual use abroad for many years no instance of deterioration has been discovered. (Vienna Technical Society report.)

Dry Rot tests by University of Idaho (Forestry Dept.) give Thermax a 100% rating against fungus.

UNIFORMITY—Uniformity of raw materials, complete laboratory control and rigid factory supervision plus Re-examination Service by the Underwriters' Laboratories assure a uniform product.

REASONABLE COST — Compared with other insulation of equal thickness or efficiency, but lacking the fire-resisting and structural characteristics of Thermax, the cost of Thermax is low.

LOW LABOR INSTALLATION COST—Thermax is rapidly erected by the ordinary mechanic. It saws like lumber where fitting is required. The light weight of the units makes one man handling convenient and the large boards or slabs with a surface area of approximately 1 sq. yd. combines speed with economy.



A FULL SIZE SECTION OF THERMAX

SPECIFICATION No. 11
SHEATHING AND ROOF BOARDING

Use on Walls Under Wood Siding, Shingles, Stucco or Masonry Veneer
Use on Sloping Roofs Under Shingles, Slate, Tile or Similar Rigid Roof Units Which May Be Laid Over Wood Furring Strips

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the wall and roof areas to be covered. If both 1 in. and 2 in. thicknesses are used, list separately and the respective locations or areas covered.*

(2) MATERIAL

[Sheathing] [and] [roof boarding] shall be Thermax Insulating Board as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Boards shall be full **[1 in.] [and] [2 in.]** thick **[as above designated],** 20 in. wide by 64 in. long.

(3) APPLICATION

(3a) GENERAL—Continuity of insulation is imperative. Apply Thermax boards with the length at right angles to the framing members. End joints (except at corners, openings, etc.) shall center over framing members. Break end joints in alternate courses.

JOHN C. VEATCH RESIDENCE, PORTLAND, OREGON
Architect—Richard Sundeleaf
Thermax Used for Interior Plaster Base and Insulation

(3b) SPACING—Thermax boards shall be brought to moderate contact at all joints and intersections and with window and door frames and trim **[and with gables and parapet walls.]** Do not force Thermax into place.

(3c) NAILS—

(3c1) Use 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails for 1 in. Thermax.

(3c2) Use 16d common **[cement coated]** nails with 1 in. galvanized roofing washers or 16d large headed foundry nails for 2 in. Thermax.

(3d) NAILING—First nail Thermax to intermediate framing members and then nail the ends on all framing members spaced three (3) nails, approximately 9 in. apart. On ends four (4) nails shall be used nailed approximately ⅝ in. in from the edge.

(4) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(4a) CONSTRUCTION—Framing shall be in accordance with the recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers' Association.

(4b) WATERPROOF PAPER—Cover all exterior Thermax surfaces **[except those under stucco]** with **[specify brand]** waterproof building paper. Lap at least 2 in. at all joints and secure, through the insulation to framing members with nails driven through galvanized washers.

(4c) FURRING STRIPS—

(4c1) Provide 1x3 in. furring strips properly spaced over Thermax to take **[wood siding] [shingles] [slate] [tile] [specify] [wall] [and] [roof]** covering. Strips shall be laid **[directly over and parallel with the framing members for wood siding] [and] [at right angles to the framing members for shingles, etc.]** and nailed to each bearing.

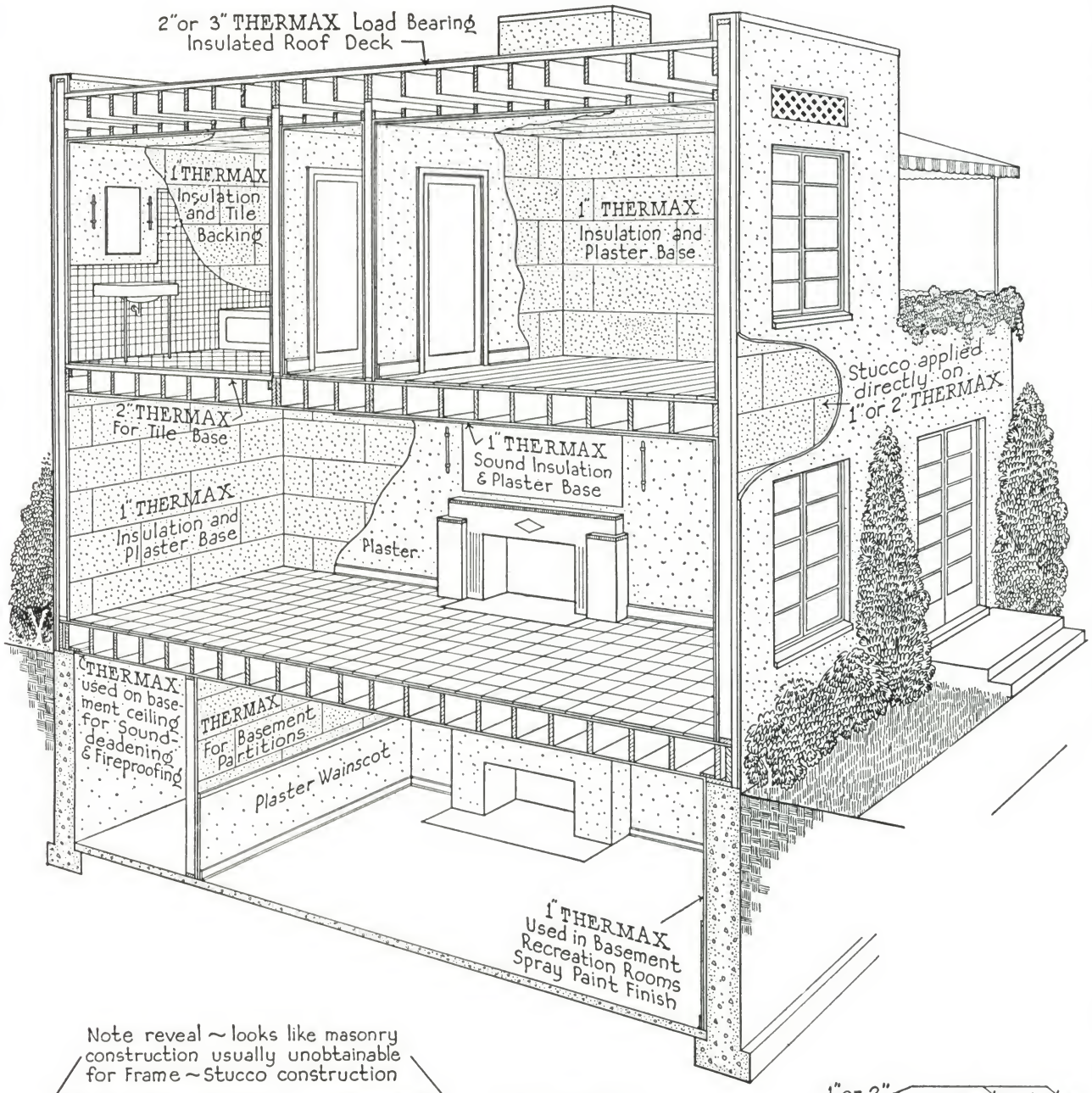
(4c2) Furring nails shall be sufficiently long to pass through the furring and Thermax to penetrate the framing members at least 1 in.

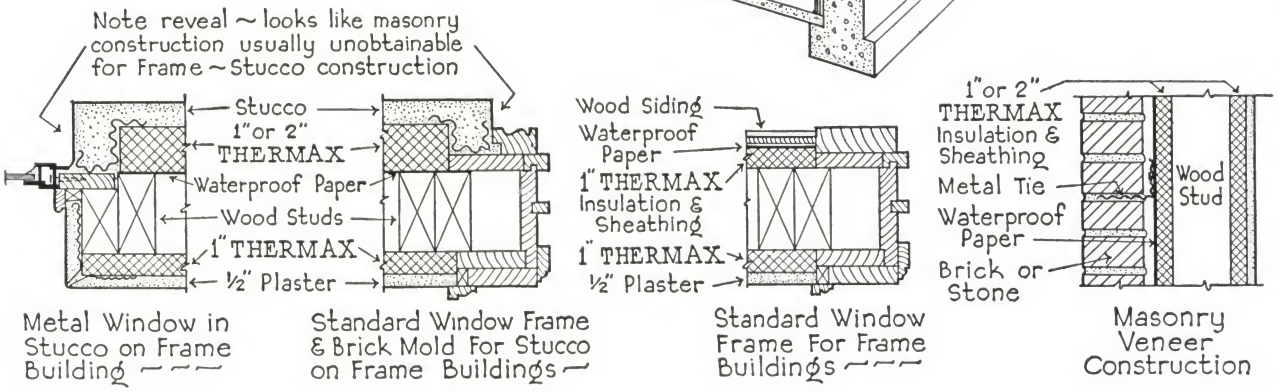
(4d) WOOD SIDING—All joints shall butt over the center of a furring strip.

(4e) MASONRY VENEER TIES—Provide **[specify type]** galvanized masonry ties at each stud spaced approximately 16 in. apart vertically. Nails shall be sufficiently long to pass through the Thermax and penetrate the stud at least 1 in.

(4f) EXTERIOR STUCCO—Attach wire mesh reinforcement over the outside surface of Thermax, after which the exterior stucco approximately 1 in. thick shall be applied in accordance with the manufacturer's standard specification for application over masonry base.

THERMAX IN RESIDENTIAL CONSTRUCTION





Metal Window in Stucco on Frame Building

Standard Window Frame & Brick Mold For Stucco on Frame Buildings

Standard Window Frame For Frame Buildings

Masonry Veneer Construction

SPECIFICATION No. 12
INTERIOR PLASTER BASE
USE AS AN INSULATING PLASTER BASE

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the wall and ceiling areas to be covered. If both 1 in. and 2 in. thicknesses are used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Plaster base shall be Thermax Insulating Board as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Units shall be full **[1 in.] [and] [2 in.]** thick **[as above designated]**, 20 in. wide by 64 in. long.

(3) APPLICATION ON FRAME CONSTRUCTION

(3a) GENERAL—Apply Thermax boards with length at right angles to the framing members. End joints shall center over framing members. Stagger end joints in successive courses on all walls and ceilings; likewise stagger end joints at juncture of walls and ceilings.

(3b) SPACING—Thermax Board Units shall be brought to moderate contact at all joints and with window and door frames. Do not force Thermax into place.

(3c) NAILS—

(3c1) Use 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails for 1 in. Thermax units.

(3c2) Use 16d common **[cement coated]** nails with 1 in. galvanized roofing washers or 16d large headed foundry nails for 2 in. Thermax units.

(3d) NAILING—Space three (3) nails approximately 9 in. apart on centers on each bearing and four (4) nails approximately ⅝ in. in from the edges at ends. First nail to intermediate framing members and then at ends.

(4) APPLICATION ON MASONRY WALLS

(4a) GENERAL—Nail Thermax to wood furring strips (spaced 16 in. o.c. for 1 in. Thermax—32 in. o.c. for 2 in.) or apply Thermax Boards to the masonry with **[Emulsified Asphalt] [½ in. thick backing of waterproofing Portland cement mortar].** Stagger end joints in successive courses.

NOTE: *Emulsified Asphalt is advocated since this not only thoroughly bonds the Thermax to the masonry, but also seals the masonry against air infiltration or moisture due to capillarity.*

(4b) BACKING—

NOTE: *Select either (4b1) or (4b2) backing as best adapted.*

(4b1) Asphalt—Apply a heavy coat of high grade emulsified asphalt in which clay is used as the emulsifying agent and containing not less than 60% of asphalt **[specify]** approximately ⅛ in. thick **[sprayed] [trowled]** onto the thoroughly cleaned masonry wall.

(4b2) Cement Mortar—Apply a ½ in. thick backing of fresh Portland cement mortar (1:2 mix gauged with approximately 10% of hydrated lime) to the thoroughly cleaned masonry wall.

(4c) ERECTING THERMAX—Apply the Thermax Boards against the backing while plastic with sufficient pressure to assure a thorough bond. Units shall be set in moderate contact, with exposed faces in a true vertical plane. Do not force Thermax into place. Cut and fit Thermax tight against all wood grounds attached to masonry (see 5b2).

(5) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

(5a) CONSTRUCTION—Framing shall be in accordance with the recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers' Association.

(5b) GROUNDS—

(5b1) For Frame Construction—Furnish and erect, substantially secured to framing members through the Thermax, ½ in. grounds to receive all woodwork trim.

(5b2) For Un-Furred Masonry Construction—Furnish and erect, substantially secured to the masonry, grounds the thickness of the insulation to which, after the insulation has been erected, shall be secured ½ in. grounds to receive all woodwork trim.

(5b3) For Furred Masonry Construction—Furnish and erect, substantially secured to furring strips through the Thermax, ½ in. grounds to receive all woodwork trim.

(5c) PLASTERING—

(5c1) Angle Reinforcement—All corners shall be reinforced with metal corner beads. All re-entrant angles shall be reinforced with expanded metal angle lath strips. Reinforcement shall be securely stapled over Thermax. Use 6-inch strips of expanded metal lath at juncture of frame and masonry constructions.

(5c2) Caution—Do not wet Thermax before applying plaster.

(5c3) Plaster—Use gypsum cement, gypsum wood fiber or lime plasters for scratch and brown coat.

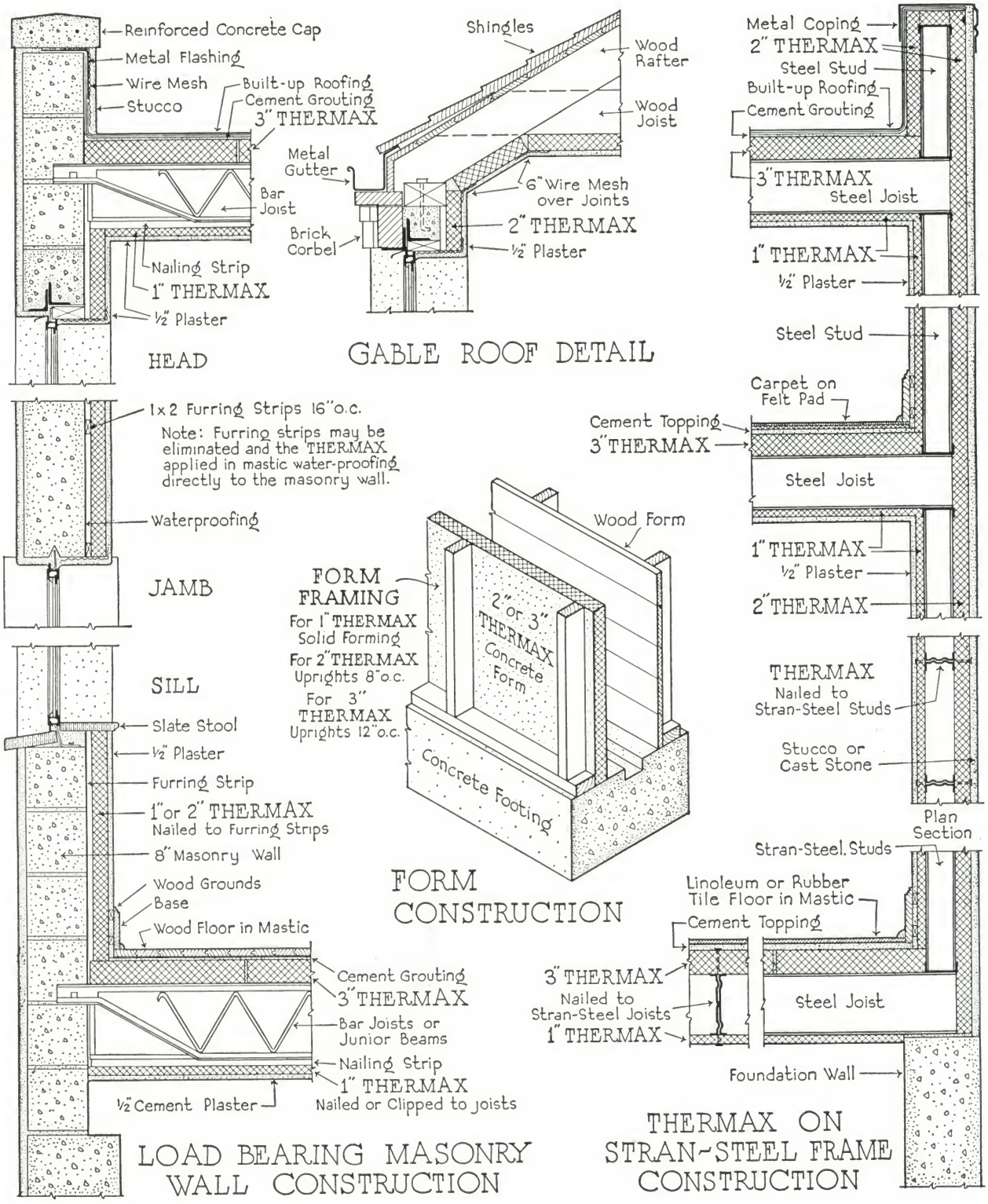
(5c4) Thickness—Full ½ in. thick.

(5c5) Application—Apply plaster in three (3) coats (scratch, brown and finish) in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary and particularly on ceilings, provide plaster screeds to insure a uniform full plaster thickness.

(5c6) Ventilation—Provide adequate ventilation for the proper drying and curing of the plaster work.

HOUSING DEVELOPMENT DETAILS

FIRE-SAFE—INSULATED—VERMIN-PROOF



SPECIFICATION No. 13
PARTITION AND FURRING SLABS

USE FOR FIREPROOF CONSTRUCTION INCLUDING COLUMN COVERING

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions **[and] [all furring for exterior masonry walls] [and] [all column covering]** shall be built of Thermax.

NOTE: *If there are any exceptions, so note. List and locate any special requirements if not clearly indicated on plans and details.*

NOTE: *Thermax partitions, etc., requiring no plaster may be finished with plastic or other high grade paint. Thermax has excellent acoustical absorption qualities and is pleasing in appearance when the blocks are symmetrically disposed and carefully laid. The surface is not fragile. If required, list separately here.*

(2) PRELIMINARY PROVISIONS

(2a) All rough bucks for openings will be provided and accurately set by others.

(2b) All wood nailing blocks to receive grounds, etc., will be provided and attached to Thermax blocks by others.

(3) MATERIALS

(3a) GENERAL—All Thermax Blocks shall be as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) PARTITION BLOCKS—Thermax, 2 or 3 in. thicknesses, as indicated on plans, 20 in. wide x 32, 48 or 64 in. long.

NOTE: *Use 2 or 3 in. for partitions up to 10 ft. in height. Use 3 in. Thermax for partitions over 10 ft. in height.*

(3c) FURRING BLOCK—Thermax **[2 in.] [3 in.]** thick, 20 in. wide x 32, 48 or 64 in. long.

(3d) COLUMN COVERING—Thermax **[2 in.] [3 in.]** thick, 20 in. wide x 32, 48 or 64 in. long.

(3e) MORTAR—Portland cement, gypsum or lime mortar fulfilling requirements of the standard A. S. T. M. Specifications. Sand shall be clean and free from organic matter with grains graded from fine to coarse. Mortar shall be mixed in the proportion of one (1) part of cement to three (3) parts of sand.

(3f) EMULSIFIED ASPHALT—Emulsified asphalt for setting exterior masonry wall furring shall be of high grade in which clay is used as the emulsifying agent and containing not less than 60% of asphalt **[specify]**.

(4) ERECTION

(4a) GENERAL—All blocks **[except furring set with asphalt]** shall be laid in Portland cement, gypsum or lime mortar with full, flush joints to a line, with horizontal beds uniformly level on each course. All joints, chinks and crevices between the tile and other work shall be filled with mortar well slushed in. Joints in alternate courses shall be broken.

All blocks shall be started on the fireproof floor, set plumb straight and true, and wedged at ceiling and slushed with mortar. Tile at corners and re-entrant angles shall be laid interlocked in alternate courses. Cut blocks into 16 in. lengths where end nailing blocks for grounds are necessary.

All joints of unplastered blocks shall be neatly pointed smooth as the work progresses.

(4b) PARTITIONS—All partitions coming in contact with existing walls shall be rigidly anchored **[by driving 10d spikes into the mortar joints of the wall at the joints of each partition tile course] [by building in at each partition tile course metal ties provided and built into the masonry by others] [specify].**

(4c) FURRING—Furring shall be laid **[against] [or] [free from]** the walls as shown on the plans and details.

(4c1) Apply a heavy coat of emulsified asphalt approximately ⅛ in. thick **[sprayed] [troweled]** on to the thoroughly cleaned masonry wall. Apply the Thermax blocks while asphalt is plastic **[without mortar joints]** against this backing with sufficient pressure to assure a thorough bond. Units shall be set in moderate contact with exposed faces in a true vertical plane. Do not force Thermax into place.

NOTE: *This method is advocated since it not only firmly bonds the Thermax to the masonry, but also seals the masonry against air infiltration or moisture due to capillarity.*

(4c2) Rigidlly anchor the free standing furring tile to the masonry wall approximately every square yard of face area **[by 10d spikes driven into the mortar joints of the wall at the course joints of the furring tile] [by building in at the furring tile course metal ties provided and built into the masonry by others] [specify].**

NOTE: *Use for free standing furring. Dampproofing of wall back of furring is advocated.*

NOTE: *See also par. 4, page 40, under "Thermax as Interior Plaster Base."*

(4d) COLUMN COVERING—A single thickness of block shall be laid against the outside edges of the steel **[and the space between the tile and steel shall be solidly backfilled with pieces of Thermax blocks and mortar].**

NOTE: *Include or omit clause covering backfilling as required by local ordinance.*

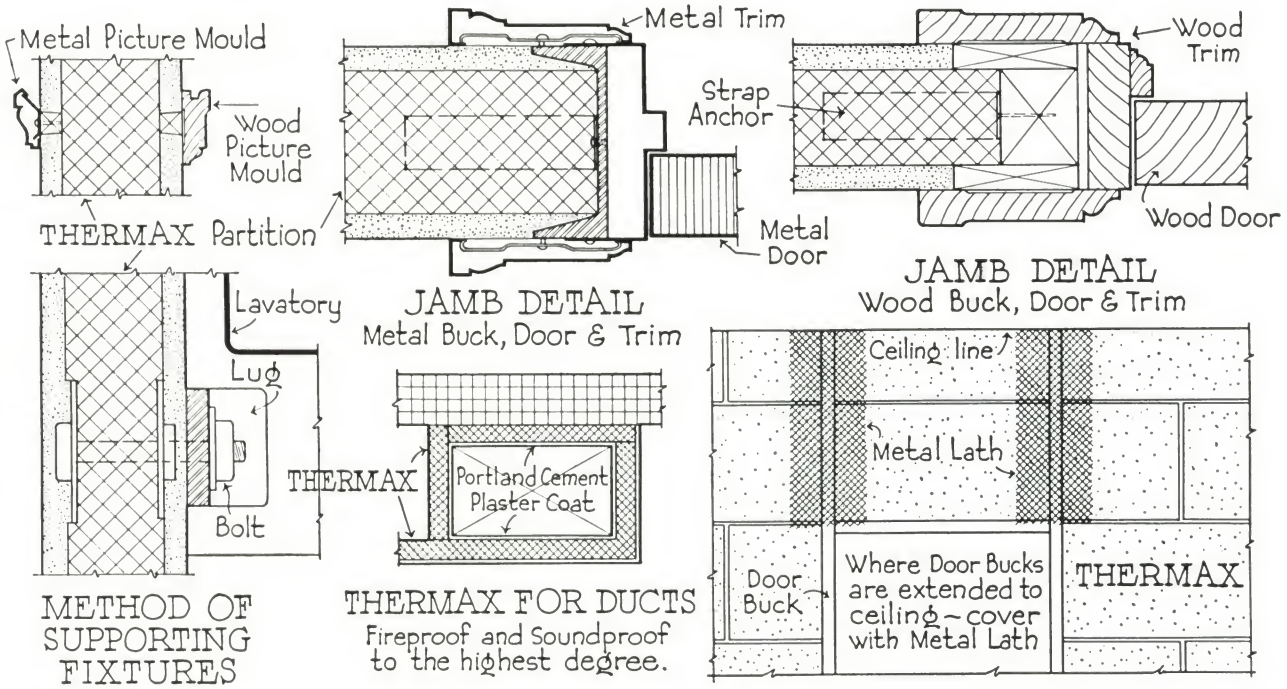
(4e) BUCK ANCHORS—Anchor all wood bucks to block by 10d cut nails driven into the buck at each block course or with other approved metal anchor.

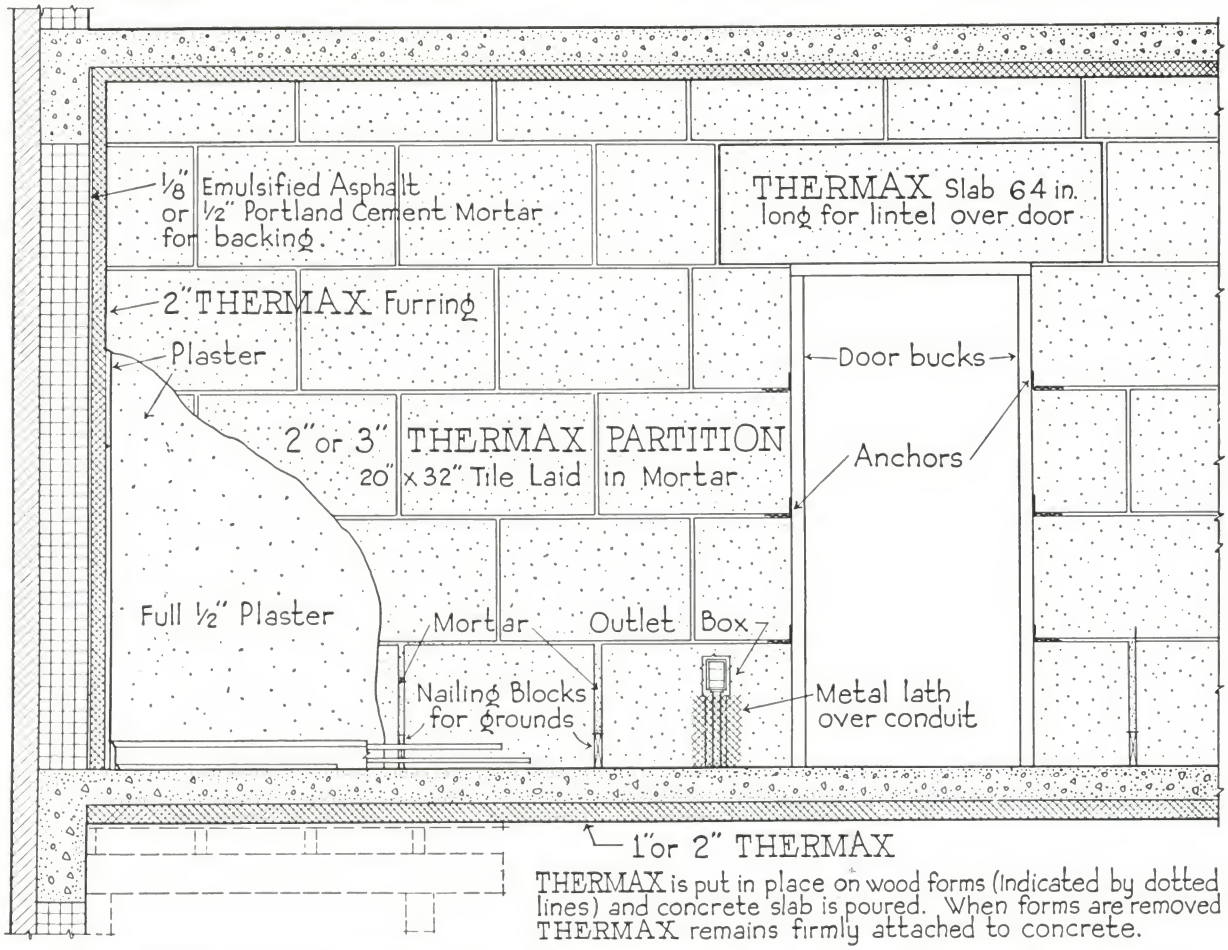
(4f) LINTELS—Lintels shall have at least 4 in. bearing at each end on the block beneath. Lintels over openings more than 4 ft. 8 in. wide shall be provided with steel lintel furnished by others.

Cover all end joints of lintels with expanded metal lath strips 8 in. wide, tacked to blocks with large head nails or staples.

PARTITION AND FURRING SLABS

FIREPROOF—LIGHT WEIGHT—SOUND INSULATING





THERMAX is put in place on wood forms (indicated by dotted lines) and concrete slab is poured. When forms are removed THERMAX remains firmly attached to concrete.

SPECIFICATION No. 14
2 INCH THICK STEEL STUD AND THERMAX PARTITION
USE FOR FIREPROOF CONSTRUCTION

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions **[so indicated]** shall be 2 in. thick (finish) metal stud and Thermax construction.

(2) PRELIMINARY PROVISIONS

All rough bucks for openings and ½ in. thick plaster grounds will be provided and set by others.

(3) MATERIALS

(3a) THERMAX—1 in. thick, 20 in. wide x 64 in. Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) STEEL STUDS—Standard 1 in. steel channels, preferably hot rolled, weighing not less than 700 lbs. per M lin. ft.

(3c) CLIPS—Clips for attaching Thermax to steel studs shall be Thermax Clips of 14 ga. spring steel wire.

(4) ERECTION

(4a) Drill holes aligned in a vertical plane in floor and ceiling at least ¾ in. deep, 20½ in. o. c. Cut studs slightly long and spring into the holes.

(4b) Securely anchor a 1 in. channel runner at floor and ceiling with lag screws or toggle bolts. Align channel runners in a vertical plane. Bend 4 in. shoe on top and bottom of each vertical stud. Erect studs 20½ in. o. c. and securely wire studs to runners.

(4c) Securely anchor 1 in. channel runners at floor and ceiling with lag screws or toggle bolts. Align channel runners in a vertical plane. Studs shall be cut to length, spaced 20½ in. o. c., and spliced by bending separate shoes of a narrower channel or bar and wiring these to studs and runners.

NOTE: *(4a), (4b), (4c) above are optional methods.*

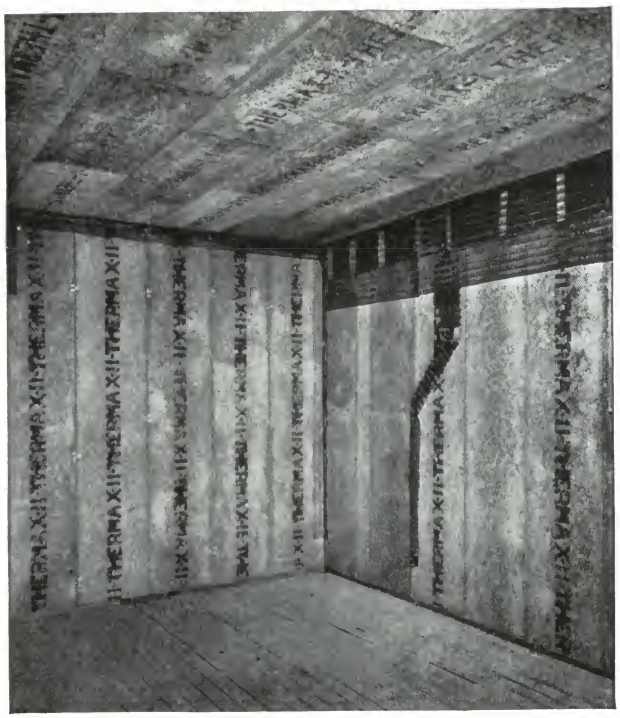
(4d) The first stud shall be erected against a structural wall and substantially secured. Attach to this stud Thermax Clips spaced approximately 12 in. apart o. c., loops outward.

(4e) In the first panel set in 1 in. thick Thermax Slabs, end to end from floor to ceiling inserting the edge next the wall stud in the clip loops. Secure the edges of slabs next to the second stud with Thermax Clips with loops outward. Erect subsequent Thermax panels in similar manner.

(4f) Place a stud at all opening bucks extending from floor to ceiling and secure to buck.

(4g) Accurately fit Thermax Slabs at ceilings, openings, etc., and around conduits, outlet boxes, etc. Where necessary, form pipe and conduit space with studs. Cover all pipe spaces, conduits, etc., with metal lath strips tacked to Thermax.

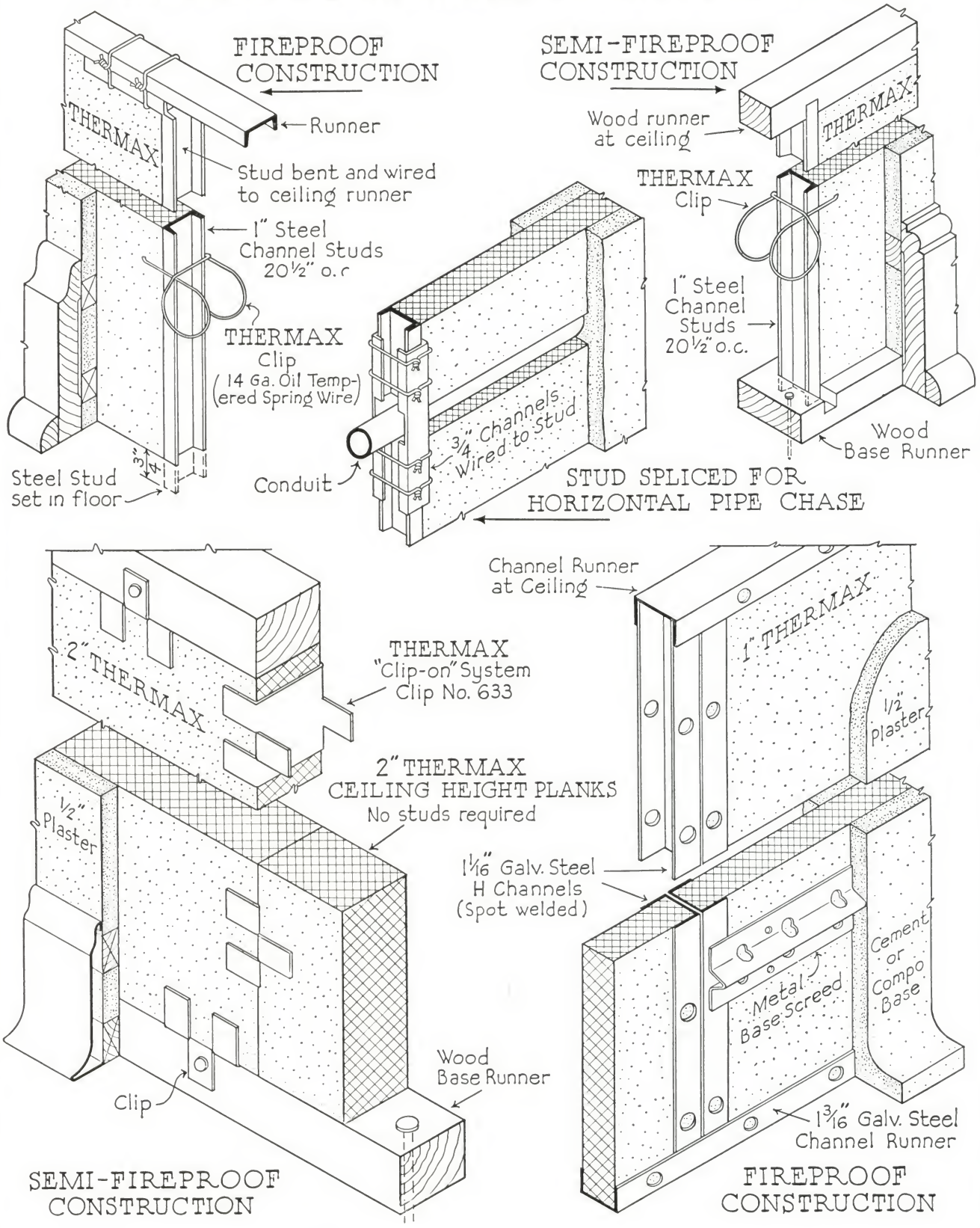
2 In. Thick Steel Stud and Thermax Partition Ready for Plaster—Rapidly Erected and Economical in Cost



2 In. Thick Thermax Plank Partitions 9 and 8 Ft. High—No Studs Required—Note Provision for Conduit

STEEL STUD PARTITIONS

FIREPROOF—LIGHT WEIGHT—SOUND INSULATING



SPECIFICATION No. 15
HOLLOW PARTITION CONSTRUCTION
USE FOR FIREPROOF CONSTRUCTION

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

All partitions so indicated on the plans and details shall be built of Thermax Hollow Construction.

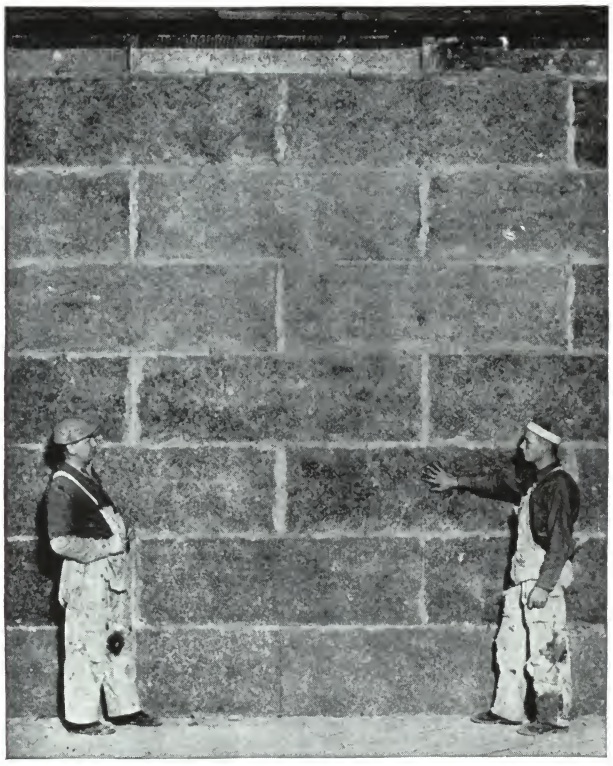
NOTE: *If there are any exceptions, so note. List and locate any special requirements if not clearly indicated on plans and details.*

(2) PRELIMINARY AND SUPPLEMENTARY PROVISIONS

(2a) All rough bucks for openings will be provided and accurately set by others.

(2b) All wood nailing strips will be provided and accurately set by others. They shall be sized to the clear interior space detailed and rigidly secured to the floors, ceilings, and walls in a manner best adapted to the particular construction.

NOTE: *On wood construction strips may be nailed to the rough flooring or framing member—cement coated nails preferred. On concrete construction sleeper clips cast in the concrete are preferable to cement nails. Rawl plugs are excellent for attaching strips to masonry walls. See also Note under (3b).*



NINTH STREET SCHOOL, LOS ANGELES
Thermax Fire-resisting Partitions—12′ 6″ High

(2c) Plaster grounds for full ½ in. plaster shall be provided and attached by others. Grounds shall be nailed to Thermax with nails driven at an angle.

NOTE: *For plastering, see (5c) page 40, under heading "Thermax As Interior Plaster Base."*

(3) MATERIALS

(3a) THERMAX—1 in. thick, 20 in. wide x 64 in. Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) SPREADER CLIPS—Spreader clips shall be made of not less than 16 gauge **[galvanized] [specify rustproofing]** steel ½ or ¾ in. wide formed as detailed to support and seat the Thermax slabs and separate them to the required distance. Halves of clips shall be accurately spot welded together.

NOTE: *Where desired half clips may be spot welded to cold rolled channels and these secured to floors, walls, door bucks, and ceilings in lieu of wood nailing strips. Clips shall be accurately spaced to rigidly support the Thermax slabs in the same general manner as detailed. If required, so specify and detail.*

(3c) MORTAR—Portland cement mortar (gauged with hydrated lime) fulfilling requirements of the standard A. S. T. M. Specifications. Sand shall be clean and sharp, free from organic matter with grains graded from fine to coarse. Mortar shall be mixed in the proportion of one (1) part of Portland cement to three (3) parts of sand, gauged with approximately 10% of hydrated lime.

(4) ERECTION

(4a) All blocks shall be laid in cement mortar (gauged with lime) with full, flush joints with horizontal beds uniformly level on each course. All joints, chinks, and crevices between the slabs and other work shall be filled with mortar well slushed in. Joints in alternate courses shall be broken.

(4b) All slabs in alternate courses shall break vertical joints with those below.

(4c) Starting at the floor, bed the first course of slabs in mortar and nail them to nailing strips at floors, walls, and opening bucks. Nails shall be 8d common **[cement coated]** nails with 1 in. galvanized roofing washers or 8d large headed foundry nails. Place the spreader clips at top, four (4) to the slab, one at each end close to the end joint and two at the center so spaced as to secure the ends of the next laid course.

(4d) Subsequent courses shall be laid in similar manner.

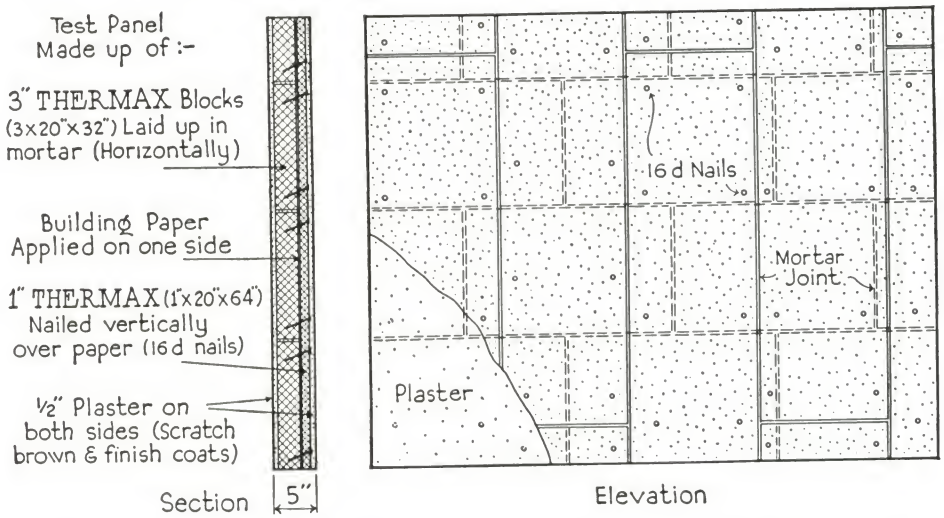
(4e) Accurately fit Thermax Slabs at ceilings, openings, etc., and around conduits, outlet boxes, etc. Nail top of ceiling slabs to ceiling nailing strip.

SOUND PROOF PARTITIONS

5" OVERALL THICKNESS

Sound Transmission Test, Bureau of Standards, July 19, 1934

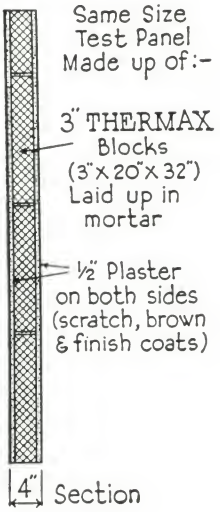
SOUND TRANSMISSION LOSS IN DECIBELS 47.4



4" OVERALL THICKNESS

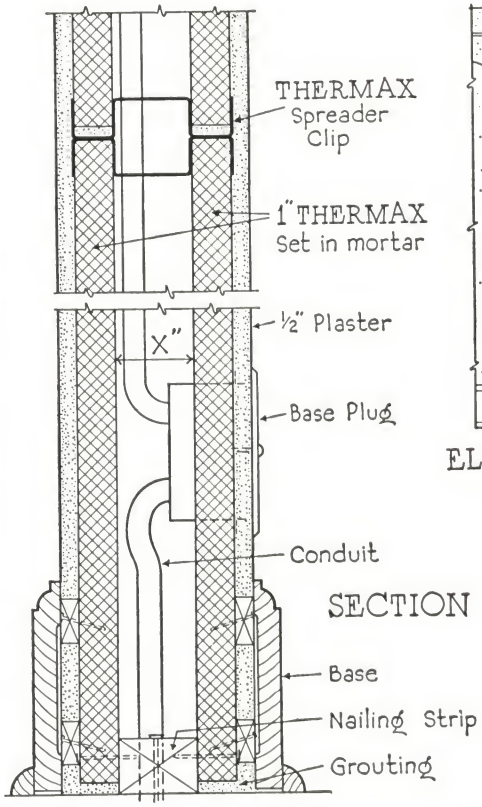
Bureau of Standards Test, June 7, 1934

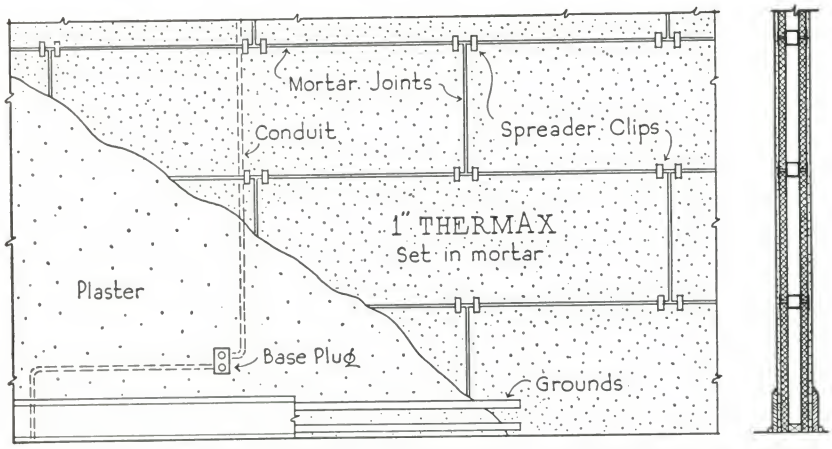
LOSS IN DECIBELS 35.0



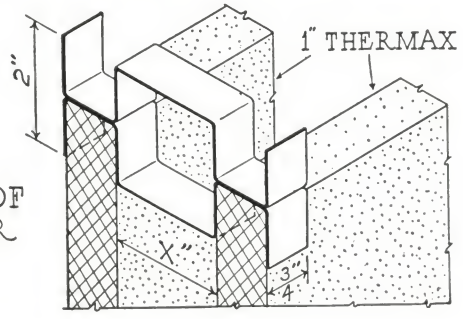
HOLLOW PARTITION CONSTRUCTION

EARTHQUAKE RESISTING





ELEVATION OF PARTITION SHOWING LOCATION OF CLIPS



DETAIL OF SPREADER CLIP

SPECIFICATION No. 16
INSULATING STRUCTURAL FLOOR AND CEILING SLABS

USE FOR FIREPROOF CONSTRUCTION IN CONJUNCTION WITH STEEL JOISTS AND JUNIOR BEAM CONSTRUCTIONS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the floor and ceiling areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) CONSTRUCTION

The **[floors] [and] [ceilings]** are constructed **[by others] [specify]** of **[specify type of joist]** spaced **[specify]** as noted on plans.

NOTE: *Maximum joist spacing, 24 in. o. c.*

(3) MATERIALS

(3a) SLAB MATERIAL—[Floor] [and] [ceiling] slabs shall be Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois.

(3b) FLOOR SLABS—Floor slabs shall be 3 in. thick x 20 in. wide x 48, 64 or 72 in. long.

FRENCH HOSPITAL, NEW YORK CITY

Two-Inch Thermax Suspended Ceiling for Plaster Base, Insulation, and Sound-Proofing

(3c) CEILING SLABS—Ceiling slabs shall be **[1in.] [2 in.]** thick x 20 in. wide x 48 or 64 in. long.

NOTE: *Select thickness with regard to fireproofing required by local ordinances.*

(3d) FLOOR SLAB ATTACHMENT—Special Thermax galvanized clips adapted to fit the top flange of the steel construction or nail Thermax directly to Nailer Joists.

(3e) CEILING SLAB ATTACHMENT—Special Thermax galvanized clips or nail Thermax directly to Nailer Joists.

(4) LAYING THE FLOOR SLABS

Thermax Floor Slabs shall be laid at right angles to the joists and fastened by Thermax Clips or nailed direct to nail joints. Clips shall be secured in place with galvanized nails driven into the Thermax. Ends of units shall rest on joists with the joint between adjacent slabs centered over the flange. Thermax slabs shall be brought to moderate contact. Do not force Thermax into place. Break end joints in alternate rows. Place wire mesh reinforcement over entire top surface of Thermax before applying Portland cement topping. Use 1 in. minimum thickness of Portland cement mortar (1:3 mix gauged with approximately 10% of hydrated lime) for cement finish.

NOTE: *Specify elsewhere the finish to be applied over the structural slab.*

(5) ERECTING SLABS, SUSPENDED CEILING CONSTRUCTION

(5a) RUNNER CHANNELS—[Specify Construction, Spacing and Suspension].

(5b) CROSS-FURRING—Apply cross-furring at right angles to the **[runner channels] [joists]**, 16 in. o. c. substantially secured to the flange.

(5c) Ceiling slabs shall be erected at right angles to the cross-furring. Thermax slabs shall be brought to moderate contact. Do not force Thermax into place. Break end joints in alternate rows centering these over the center of the cross-furring member.

Slabs shall be secured to the cross-furring in accordance with the Standard Thermax Suspended Ceiling Detail with **[concealed] [exposed]** channel clips hung over each cross-furring member. Midway between each channel clip on the long edges of the slabs install a **[concealed] [exposed]** separator clip. Install (2) **[concealed] [exposed]** separator clips at all slab end butt joints.

NOTE: *Slabs may be plastered with gypsum or lime plaster in accordance with the plaster manufacturer's standard specifications. Slabs may be left exposed for interior finish.*

SPECIFICATION No. 17
INSULATION OVER ROOF DECKS

USE OVER WOOD, CONCRETE AND STEEL AND SIMILAR ROOF DECKS

NOTE: *For details, see page 51.*

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Roof insulation shall be Thermax as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Insulation shall be **[1 in.] [2 in.] [3 in.]** thick boards, 20 in. wide x 48 or 64 in. long.

(3) APPLICATION—GENERAL

(3a) CONDITION OF DECK—Deck shall be smooth, dry and swept clean.

(3b) GENERAL—Thermax shall be dry when applied. Lay only as much insulation as can be covered and protected by the finished roof covering in a single day. Where work is stopped, protect the edges of insulation with overlapping mopped strips of roofing felt, leaving the felt strips as a permanent seal. Apply Thermax units with edges in moderate contact. Cut units to fit snugly against all parapets or similar vertical surfaces. Do not force Thermax into place. Break joints between alternate rows.

Seal off at least each 30x30 ft. area (900 sq. ft.) with overlapping mopped strips of roofing felt on all edges.

Grout all joints with Portland cement mortar (1:3 mix, gauged with approximately 10% of hydrated lime) and brush a skim coat of thick consistency over the entire surface before applying built-up roofing.

(3c) APPLICATION OVER WOOD DECKS—

(3c1) Felt—Apply **[one] [two]** layer **[s]** of dry, saturated roofing felt over the roof boards. Lap the felt at least 1½ in. at joints. **[Felt shall extend 6 in. up on walls and all vertical surfaces and shall finally be turned over and mopped to top of insulation.]**

NOTE: *Felt protects against dripping of pitch or asphalt through deck. For high humidity conditions apply two layers (lapped half) of saturated roofing felt and the Thermax in hot bitumen as called for under (3d).*

(3c2) Laying—Apply the Thermax units over the felt in a single layer of the thickness specified.

(3c3) Nailing—Insulation shall be secured to deck with common **[cement coated]** nails with 1 in. galvanized roofing washers or large headed foundry nails sufficiently long to penetrate through the insulation and provide firm hold in deck. Space nails approximately 12 in. o.c. and not more than 2 in. from edges of the unit. Carry one row of nails longitudinally through the center of each unit.

(3d) APPLICATION OVER CONCRETE DECKS—

(3d1) Felt—Apply **[one] [two]** layer **[s]** of saturated roofing felt over the roof deck, thoroughly stuck in hot **[pitch] [asphalt].** Felt shall extend 6 in. up on walls and all vertical surfaces and shall finally be turned over and mopped to top of insulation.

NOTE: *Include clause (3d1) where interior of structure is subject to high humidity conditions as in paper, textile mills, etc., or on applications made during winter months where decks do not have opportunity to thoroughly cure and dry out before insulation is applied.*

(3d2) Laying—Mop deck thoroughly with **[hot pitch] [hot asphalt]** using not less than 35 lbs. per square. Apply the Thermax units while the mopping is still hot. Firmly bed a single layer of Thermax, of the thickness specified, in the binder over the entire surface.

(3e) APPLICATION OVER STEEL DECKS—

(3e1) Laying—Mop deck thoroughly with hot asphalt using not less than 35 lbs. per square.

NOTE: *Pitch should not be used over steel decks.*

Apply the Thermax units while the mopping is still hot. Firmly bed a single layer of Thermax, of the thickness specified, in the binder over the entire surface.

(4) FINISHED ROOFING

Finished roofing shall be applied over insulation in accordance with the roofing manufacturer's specification.

NOTE: *A standard Celotex built-up 4 or 5-ply roof recommended.*

THERMAX ROOF DECK INSULATION
Note Portland Cement Mortar Grouting and Skim Coat Applied Over the Thermax

SPECIFICATION No. 18
INSULATING STRUCTURAL ROOF SLABS

USE ON FLAT OR PITCHED ROOFS AS A STRUCTURAL INSULATING PRECAST SLAB APPLIED OVER STRUCTURAL STEEL OR WOOD ROOF FRAMING

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold faced type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be constructed of Thermax Slabs. If both 2 in. and 3 in. thicknesses are used, list separately and the respective location or areas.*

(2) MATERIAL

(2a) ROOF SLABS—Roof slabs shall be Thermax Insulating Structural Roof Slabs as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Slabs shall be full **[2 in.] [and] [3 in.]** thick **[as above designated],** 20 in. wide by **[64 in.] [72 in.] [96 in.]** long.

(2b) CLIPS—Clips for attaching Thermax Slabs to the structural steel supporting Ts shall be Thermax Galvanized Roofing Clips.

(2c) NAILS—Common cement coated nails driven through 1 in. galvanized roofing washers or large headed foundry nails.

RED ARROW MOTOR FREIGHT LINES, INC.
View Over Freight Terminal Loading Platform
Thermax Slabs Applied Over Steel Joists

(2c1) Use 16d nails for 2 in. Thermax slabs.

(2c2) Use 30d nails for 3 in. Thermax slabs.

(3) LAYING ROOF SLABS

(3a) GENERAL—Thermax Roof Slabs shall be laid at right angles to the framing members. Ends of slabs shall bear equally on framing members. Break end joints in alternate rows. Protect Thermax with "plank walks" during construction.

(3b) Thermax slabs shall be brought to moderate contact at all joints. Do not force Thermax into place.

(3c) STEEL FRAMING—Thermax Roof Slabs shall be fastened to steel framing Ts with Thermax Clips at each T. Clips shall be secured in place with galvanized nails driven into the Thermax. Sufficient clips shall be applied at eaves and ridges to form soldering grounds for sheet metal work.

(3d) WOOD FRAMING—First nail Thermax to intermediate framing members spacing three (3) nails approximately 9 inches apart o. c. on each bearing. On ends use four (4) nails approximately ⅝ in. in from the edge.

(3e) GROUT AND TOPPING—All joints shall be filled flush with the top of the Thermax slabs with Portland cement mortar (1:3 mix gauged with approximately 10% hydrated lime.

The entire surface of the Thermax Roof Deck shall be smoothly topped with **[specify thickness]** of Portland cement mortar (1:3 mix gauged with approximately 10% of hydrated lime); or with a layer of Celotex Roof Insulation **[specify thickness]** laid at right angles to the longitudinal dimension of the Thermax, spot mopped with 180 to 200° M.P. asphalt and tacked at corners with 1¾ in. barbed roofing nails. Average care should be taken, until the cement topping has set, to avoid damage to the Thermax Slabs from traffic and other causes. The roof slabs shall be stored under cover and no greater surface shall be laid than can be coated as above the same day, unless the slabs, are protected from rain and snow.

Protect Thermax with "plank walks" during construction.

(4) FINISHED ROOFING

Finished roofing shall be applied over the Thermax Roof Slabs in accordance with the roofing manufacturer's specifications.

NOTE: *A standard Celotex built-up 4 or 5-ply roof recommended.*

(5) SUPPLEMENTARY PROVISIONS

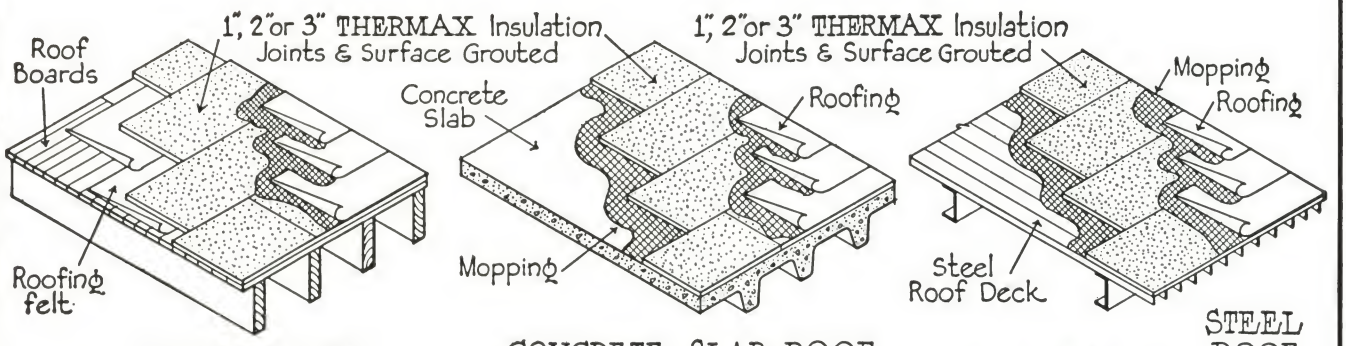
NOTE: *Provide for the following in other specification divisions.*

(5a) STEEL ROOF CONSTRUCTION—Design and strength of framing to support Thermax Roof Slabs shall be in accordance with the engineering data pertaining to span and thickness of slab units furnished by The Celotex Corporation to sustain the specified live and dead loads.

The steel, its fabrication and its protection shall be in accordance with the Standard Specifications of the American Institute of Steel Construction.

(5b) PAINTING—The exposed underside of the Thermax Roof Slabs shall be **[spray] [brush]** painted **[previous to] [after]** installation with **[specify brand] [aluminum paint] [light reflecting cold water or oil paint] [specify].**

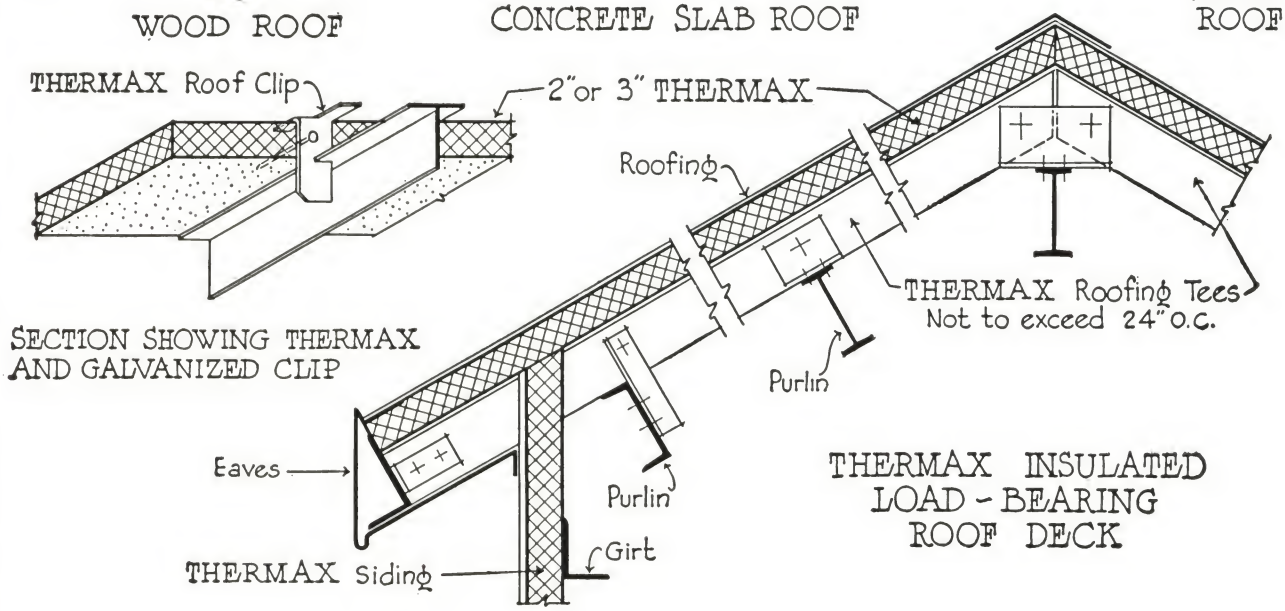
INSULATED ROOFS AND CEILINGS



WOOD ROOF

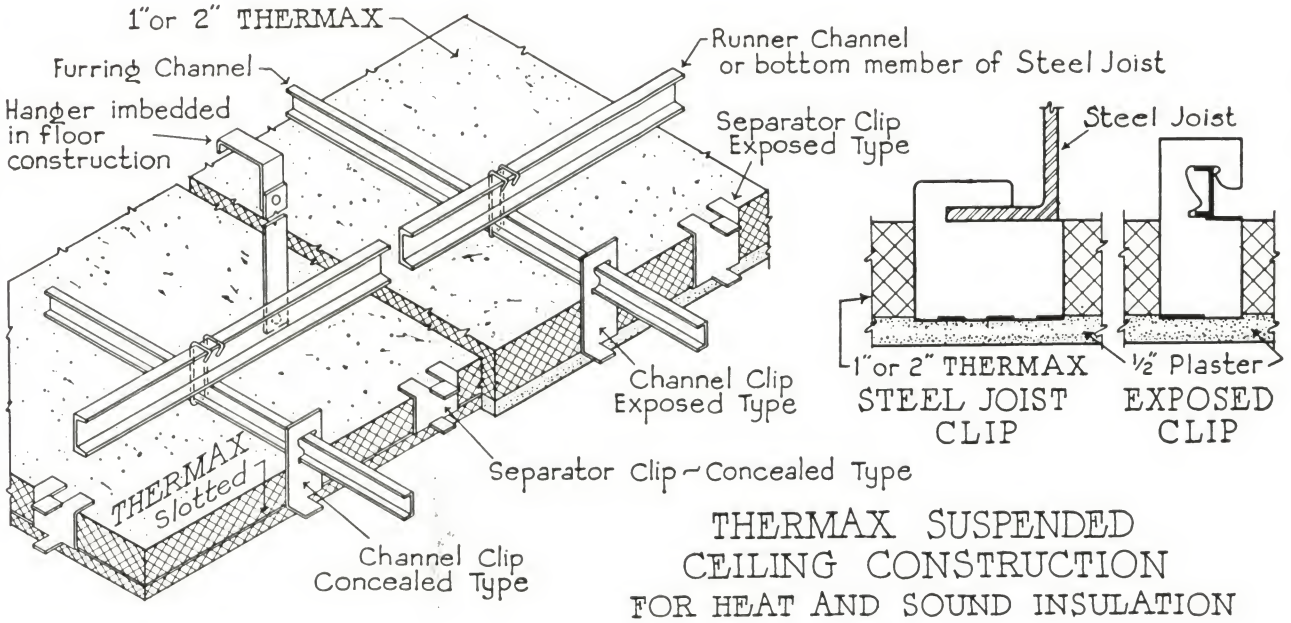
CONCRETE SLAB ROOF

STEEL ROOF



SECTION SHOWING THERMAX AND GALVANIZED CLIP

THERMAX INSULATED LOAD-BEARING ROOF DECK



STEEL JOIST CLIP

EXPOSED CLIP

THERMAX SUSPENDED CEILING CONSTRUCTION FOR HEAT AND SOUND INSULATION

SPECIFICATION No. 19
INSULATING STRUCTURAL ROOF SLABS
LAID IN STEEL TEES
USE AS A COMBINATION THERMAL AND SOUND INSULATION ON STEEL FRAME BUILDINGS

NOTE: *Notes are explanatory or advisory only and should not be included in the specifications.*

NOTE: *Select and include only those clauses which apply to the particular work. Words or clauses within brackets in bold face type are selective.*

(1) WORK INCLUDED

NOTE: *Here list and locate definitely the roof areas to be constructed of Thermax Structural Roof Deck. If both 2-inch and 3-inch thicknesses of Thermax are used, list separately and the respective location or areas.*

(2) MATERIAL

(2a) ROOF SLABS—Roof slabs shall be Thermax Insulating Structural Roof Slabs as sold by The Celotex Corporation, 919 North Michigan Avenue, Chicago, Illinois. Slabs shall be full **[2 in.] [and] [3 in.]** thick **[as above designated],** 20 inches wide by **[specify]** long.

(2b) SUB-PURLINS—Sub-purlins shall be steel tees of sizes and spacings required or indicated on the structural plans, furnished with a shop coat of paint.

(2c) CLIPS—Provide necessary Special Thermax Galvanized Roofing Clips for securing Thermax Slabs to sub-purlins only when extreme wind pressures are to be considered.

(3) LAYING ROOF SLABS

(3a) GENERAL—Thermax Roof Slabs shall be laid in place between steel sub-purlins (tees) provided under "Structural Steel Work" and which are erected in place by the Steel Contractor. The Thermax Slabs shall be of such lengths and so placed that the end joints will be concealed by the main purlins.

(3b) GROUT AND TOPPING—All joints shall be filled flush with the top of the Thermax slabs with Portland cement mortar (1:3 mix gauged with approximately 10% hydrated lime).

The entire surface of the Thermax Roof Deck shall be smoothly topped with **[specify thickness]** of Portland cement mortar (1.3 mix gauged with approximately 10% of hydrated lime); or with a layer of Celotex Roof Insulation **[specify thickness]** laid at right angles to the longitudinal dimension of the Thermax, spot mopped with 180 to 200° M.P. asphalt and tacked at corners with 1¾ in. barbed roofing nails. Average care should be taken, until the cement topping has set, to avoid damage to the Thermax Slabs from traffic and other causes. The roof slabs shall be stored under cover and no greater surface shall be laid than can be coated as above the same day, unless the slabs are protected from rain and snow.

Protect Thermax with "plank walks" during construction.

(4) FINISHED ROOFING

Finished roofing shall be applied over the Thermax Roof Slabs in accordance with the roofing manufacturer's specifications.

NOTE: *A standard Celotex built-up 4 or 5-ply roof recommended.*

(5) SUPPLEMENTARY PROVISIONS

NOTE: *Provide for the following in other specification divisions.*

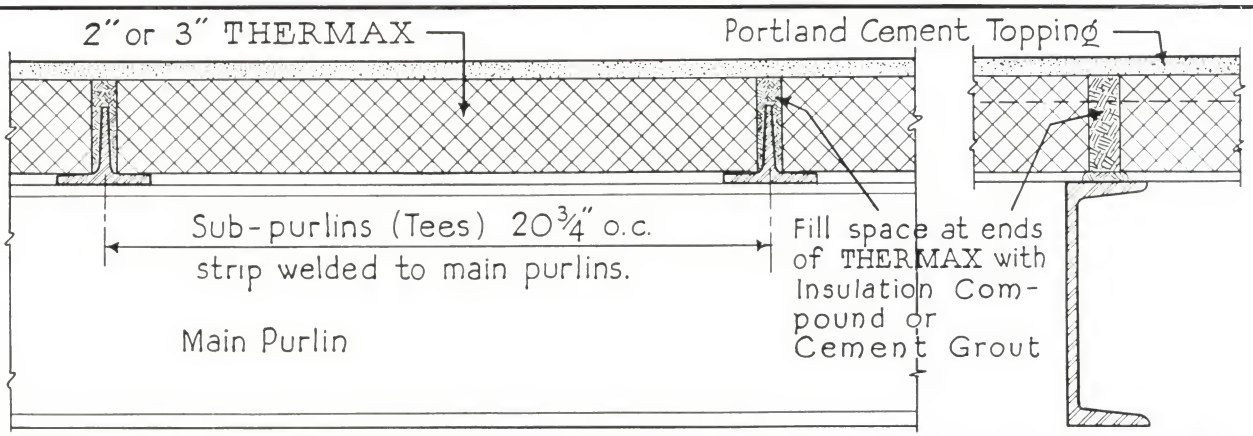
(5a) STEEL ROOF CONSTRUCTION—Design and strength of framing to support Thermax Roof Slabs shall be in accordance with the engineering data pertaining to span and thickness of slab units furnished by The Celotex Corporation to sustain the specified live and dead loads.

The steel, its fabrication, and its protection shall be in accordance with the Standard Specifications of the American Institute of Steel Construction.

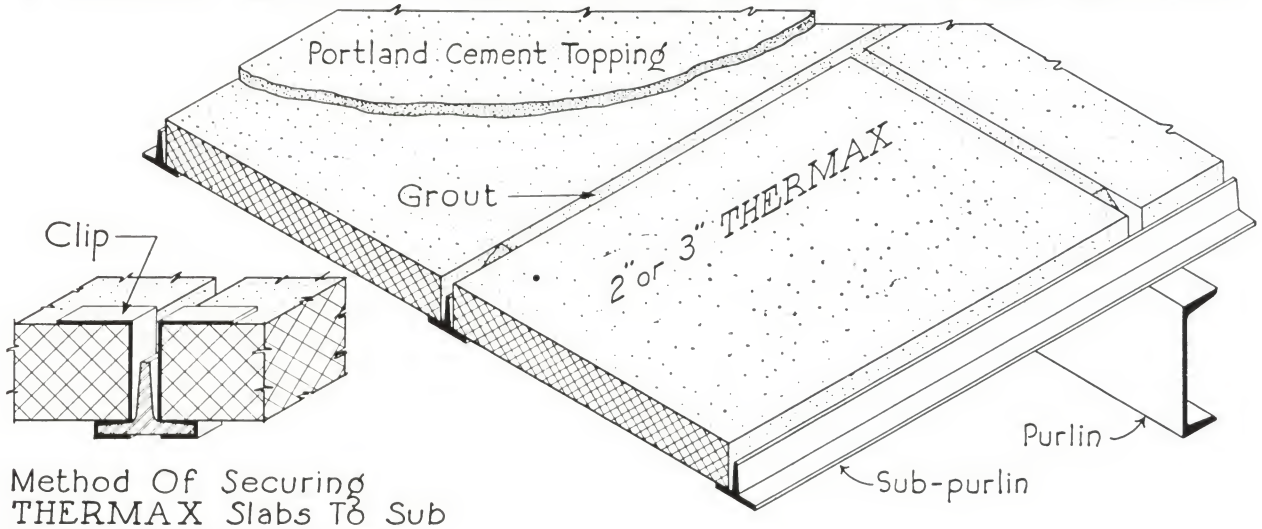
(5b) PAINTING—The exposed underside of the Thermax Roof Slabs shall be **[spray] [brush]** painted **[previous to] [after]** installation with **[specify brand] [aluminum paint] [light reflecting cold water or oil paint] [specify].**

MINNEAPOLIS ARMORY, MINNEAPOLIS, MINN.
Architect & Engineer, Inc.—P. C. Bettenburg; Consulting Architect & Engineer—W. H. Wheeler
Two-inch Thermax Laid in Tees for Concrete Forming, and a Combination Roof Deck Insulation and Acoustical Treatment

INSULATING STRUCTURAL ROOF SLABS



TYPICAL SECTION THRU ROOF DECK CROSS SECTION



Method Of Securing THERMAX Slabs To Sub Purlins When Extreme Wind Pressures Are To Be Considered

TRANSVERSE STRENGTH OF THERMAX SLABS—WITHOUT AND WITH CEMENT TOPPING

Data from Independent Laboratory Results

Slab thickness	Span between supports c. to c.	Ultimate concentrated load at center	Equivalent uniformly distributed load	Breaking load per sq. ft.	Average ultimate load center deflection*
3 in. Thermax	**24 in.**	**575 lbs.**	**1150 lbs.**	**345 lbs.**	**.327 in.**
2 in. Thermax	**24 in.**	**350 lbs.**	**700 lbs.**	**210 lbs.**	**.314 in.**
2 in. Thermax	**16 in.**	**555 lbs.**	**1110 lbs.**	**500 lbs.**	**.236 in.**

Notes: *Deflections shown are not permanent. Spacing supports on greater than 24 inch centers is not recommended.

Slab thickness		Span between supports c. to c.	Ultimate total load†	Breaking load per sq. ft.	Maximum center deflection *
Thermax	Cement topping (1:3 mix)				
3 in.	approx. ¼ **in.**	**24 in.**	**2061 lbs.**	**625 lbs.**	**0.198 in.**
3 in.	approx. ¼ **in.**	**24 in.**	**2411 lbs.**	**725 lbs.**	**0.130 in.**
3 in.	approx. ¼ **in.**	**24 in.**	**2751 lbs.**	**826 lbs.**	**0.112 in.**
Average of three tests			**2408 lbs.**	**725 lbs.**	**0.146 in.**

Notes: †Load applied at third points across slab. Includes 41 lbs. weight of beam transferring load.
*Deflections shown are not permanent.
Spacing supports on greater than 24 inch centers is not recommended.

CELOTEX

REG. U.S. PAT. OFF.

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LONDON, ENGLAND
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General Offices

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919 North Michigan Avenue
CHICAGO, ILLINOIS

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EAST ST. LOUIS, ILLINOIS
KANSAS CITY, MISSOURI
LONDON, ENGLAND
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MARRERO, LOUISIANA
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NIAGARA FALLS, NEW YORK
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RICHMOND, CALIFORNIA
YORK, PENNSYLVANIA

INSULATION PRODUCTS *Section*

« *See* ACOUSTICAL *and* ROOFING *Sections* »

CERTAIN-TEED PRODUCTS CORPORATION

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SEATTLE, WASH.

KALITE ACOUSTICAL PLASTERS

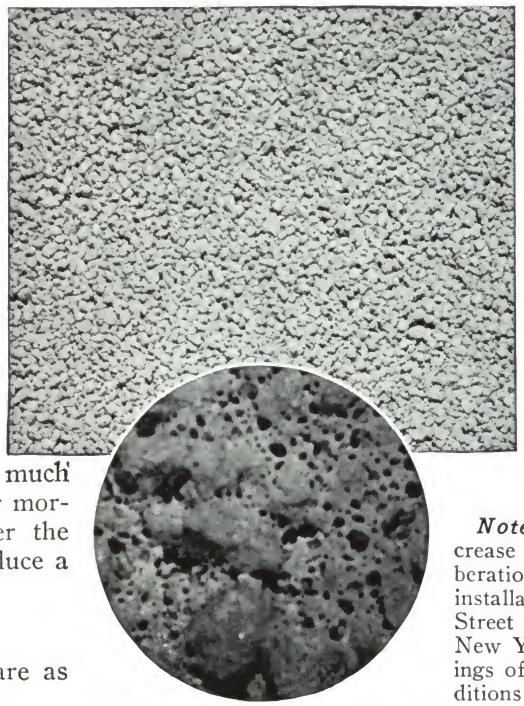
SUPERIOR MATERIALS FOR SOUND CONTROL

For Plain and Ornamental Acoustical Plaster Treatments

What Kalite Is

Kalite Acoustical Plaster is a highly cellular plaster that absorbs sound and has the basic properties that adapt it to the requirements of modern construction. It is made of carefully graded and sized pumice of a special variety, mixed with calcined gypsum and other necessary ingredients. When Kalite sets, there are minute air spaces around the pumice particles. Throughout the body of the plaster these small air spaces give the high porosity that produces those sound absorbing qualities necessary in a good acoustical material.

On the job, Kalite is mixed with water only and is then ready for application. Kalite mortar weighs approximately one-half as much as ordinary sanded gypsum plaster mortar. Kalite is finished with either the wood float or steel trowel, to produce a hard porous surface.



Photograph Showing Surface of Kalite Plaster. Enlarged View Shows Great Porosity of Surface

Three Types of Kalite Plaster

These types of Kalite Plaster are as follows:

Kalite "H" Plaster—Made of a pumice aggregate with a gypsum binder, available in either light gray or buff.

Kalite Acoustical Plasters may be decorated. Consult the nearest district sales office of CERTAIN-TEED PRODUCTS CORPORATION for information.

Kalite Hydraulic Plaster—Made of a pumice aggregate with portland cement binder and applied as a finish coat over portland cement base coat plaster. It is recommended for acoustical correction or noise reduction where physical conditions require damp-proof construction, such as the walls and ceilings of steam kitchens, swimming pools, etc. It is the color of natural portland cement.

Kalite Cast—Please see page 3 for description.

Note: The growing use of Kalite to increase the efficiency by reducing the reverberations of sound is exemplified by the installation of Cast Kalite in the new 59th Street Branch of Dry Dock Savings Bank in New York (see page 4). It was used in ceilings of work spaces to improve working conditions by reducing the noise level and was used in public spaces to build good will by increasing customer comfort and minimizing possible errors.

SOUND ABSORPTION COEFFICIENTS OF KALITE PLASTERS

KALITE "H" PLASTERS, AS MEASURED BY U. S. BUREAU OF STANDARDS UNDER DATE OF OCT. 16, 1935

Kalite thickness	Frequency						Noise coefficient
	128	256	512	1024	2048	4096	
½ in. trowel finish	.36	.33	.46	.70	.66	.68	.55
¾ in. trowel finish	.43	.38	.63	,78	.65	.70	.60

TEST BY U. S. BUREAU OF STANDARDS UNDER DATE OF MARCH 25, 1936 ON KALITE "H" PLASTER WHEN DECORATED WITH TWO COATS OF NON-BRIDGING LACQUER

Kalite thickness	Frequency						Noise coefficient
	128	256	512	1024	2048	4096	
½ in. trowel finish	.26	.31	.46	.67	.65	.68	.50

At the left are given tables showing the results of tests for sound absorption as measured on Kalite "H" panels constructed of 1½-in. angle iron carrying bars spaced 3 ft. 10 in. on centers, 1-in. furring channels spaced 12 in. on centers, 3.4-lb. expanded metal lath with standard thickness of scratch and brown coats of gypsum fibred plaster

In the application of both of these tests Kalite was applied in what is called "one coat doubled up."

The doubled up coat applied after the scratch-in coat had taken up—after about one hour lapse of time.

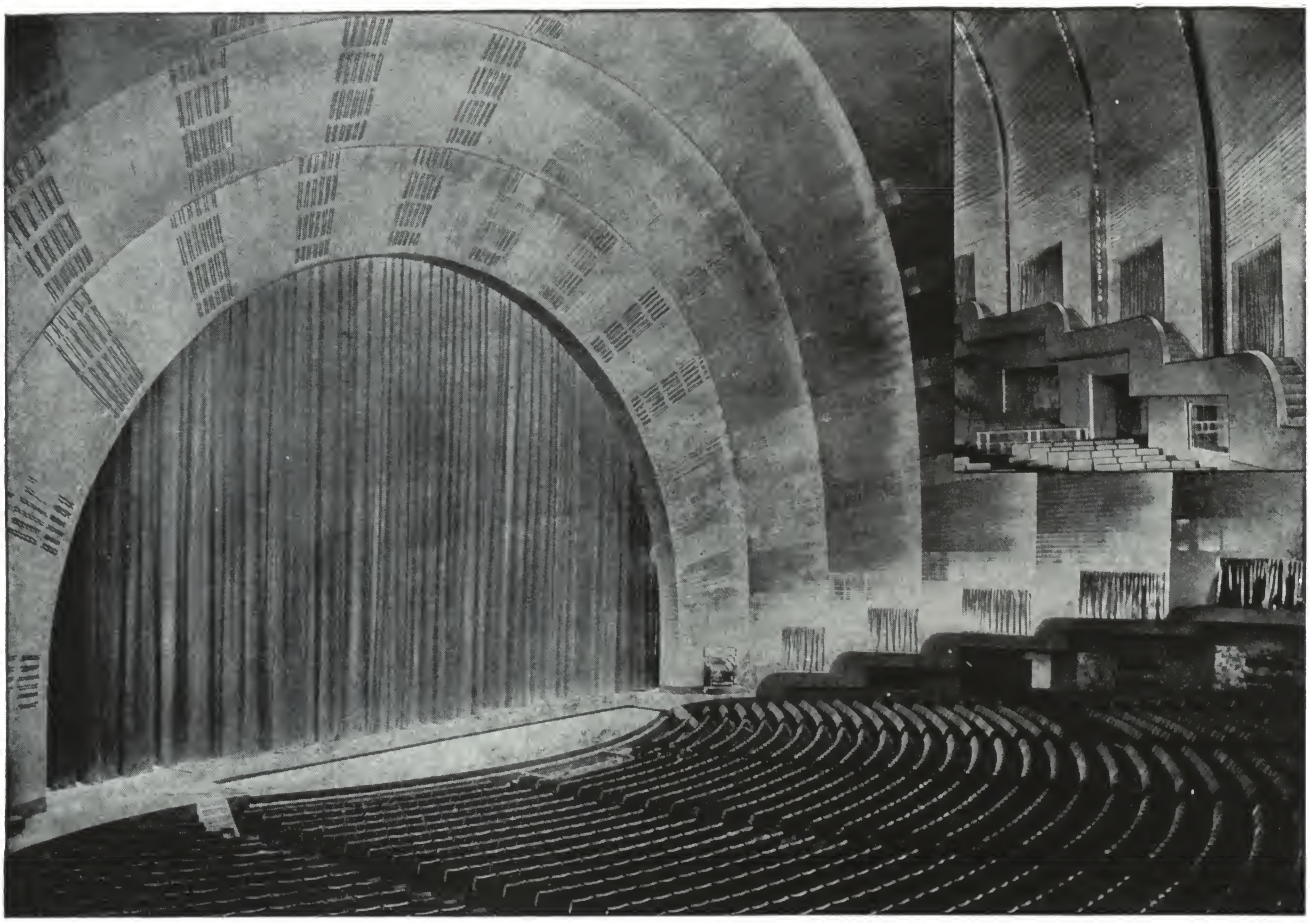
Samples of Kalite Plasters will be sent on application for any Certain-teed District Office. See page 3 for partial list of completed Kalite jobs.

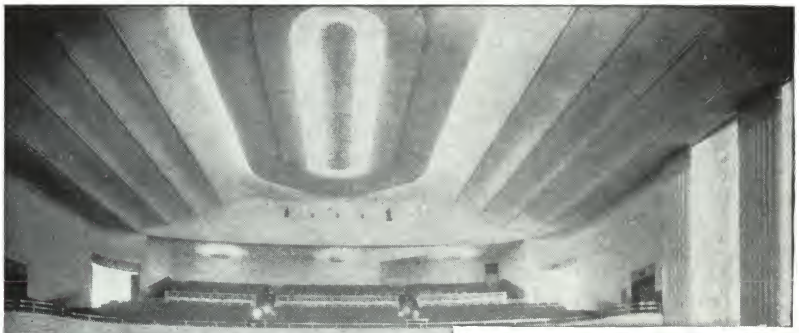
Samples of Kalite Plasters will be sent on application to any Certain-teed District Sales Office

See page 4 for partial list of completed Kalite jobs

CERTAIN-TEED PRODUCTS CORP.

KALITE ACOUSTICAL PLASTERS





Above:

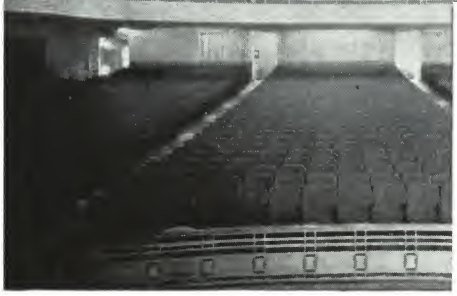
Interior of International Music Hall, Rockefeller Center, Radio City Section, New York, N. Y.

Entire fluted ceiling and walls produced in Kalite Sound Absorbing Plaster.

Left and Below:

New Criterion Theatre, Broadway, 44th and 45th Sts., New York, N. Y.

EUGENE DE ROSA, Architect, N. Y. C.
HEGEMAN HARRIS CO., INC., Builders, N. Y. C.



Ceiling and Side Walls treated with Kalite Acoustical Plaster. Note mural decoration painted over Kalite in panels between fluted pilasters on the side walls.

KALITE ACOUSTICAL PLASTERS

Kalite Cast

This is a high grade material for plain and ornamental casting purposes; it is made of a pumice aggregate and gypsum binder and furnished in a medium coarse and fine texture. This product combines high sound absorbing properties with structural strength, sharp outline of arrises, decorative detail in the finished casting, and a most pleasing texture and appearance.

Kalite Cast in either the coarse or fine textures is available in five colors; Natural White, Sandstone, Limestone, Light Buff, Medium Buff.

If Kalite Cast is to be decorated, consult the nearest district sales office of CERTAIN-TEED PRODUCTS CORPORATION for information.

Kalite Cast opens another and extremely interesting avenue to the architect and engineer to combine sound control with ornamental and decorative design at a reasonable cost.

Practically any architectural motif or ornamental design as produced in ordinary white moulding or casting plaster can be carried out in accurate detail with Kalite.

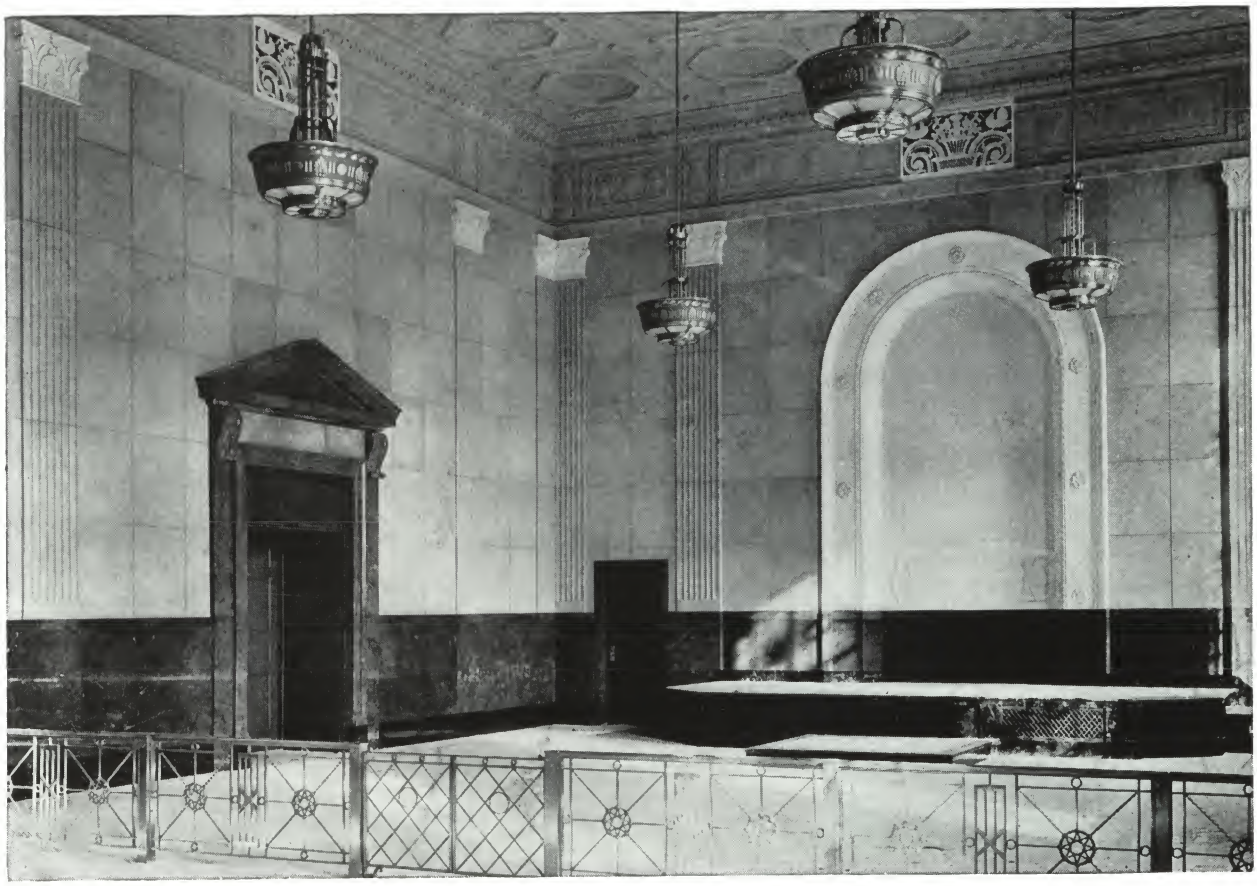
Kalite Cast is recommended for ornamental cast work in all types of buildings, such as assembly rooms, libraries, theatres, churches, auditoriums, banks and all monumental types of buildings, lobbies, and corridors, public meeting rooms, or wherever it is desirable to combine sound control with decorative architectural motifs.

Kalite Cast has been thoroughly proven in commercial work and has been successfully developed both from the technical standpoint of acoustics and practical workability.

In field tests, conducted in interiors where Kalite Cast has been installed, this Certain-teed material proved completely satisfactory, meeting all specifications. (See Bureau of Standards Tests below).

BUREAU OF STANDARDS SOUND-ABSORPTION TESTS ON KALITE CAST, MARCH 14, 1936

Frequency cycles per second	Grade D Fine Aggregate			Grade A Coarse Aggregate		
	Thickness			Thickness		
	1 in.	1½ in.	2 in.	1 in.	1½ in.	2 in.
128	.09	.20	.22	.06	.15	.23
256	.30	.39	.48	.19	.34	.55
512	.49	.59	.55	.42	.64	.73
1024	.54	.61	.58	.69	.74	.67
2048	.47	.60	.54	.74	.60	.64
4096	.48	.67	.53	.64	.69	.62
Noise reduction coefficient	.45	.55	.55	.50	.60	.65



Interior of Court Room No. 1, Post Office and Courthouse Building, Columbus, Ohio

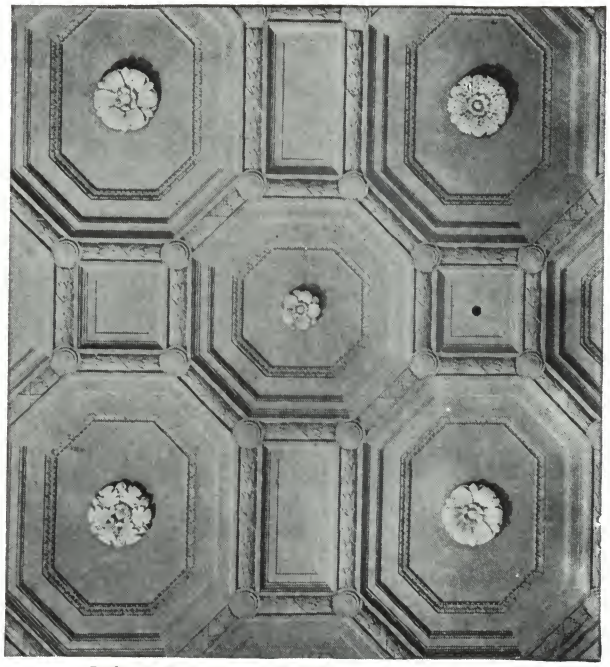
HENRY ERICSSON COMPANY, General Contractors, Chicago, Ill. RICHARDS, MCCARTHY & BULFORD, Architects, Columbus, Ohio

Ornamental Coffer Ceiling, Cornice and Frieze, as well as Wall Treatment of Fluted Pilasters, and Ashlar Panels in between. Pilasters are fabricated of Kalite Cast. The acoustics of the courtroom were tested by the U. S. Bureau of Standards after installation of Kalite, and accepted as satisfactory.

KALITE ACOUSTICAL PLASTERS

PARTIAL LIST OF KALITE INSTALLATIONS

Radio City Theatre (Music Hall), New York, N. Y.
Radio City Theatre (New Roxy), New York, N. Y.
Radio City Building No. 10
Library of Congress Annex, Washington, D. C.
Bankers Trust Building, New York, N. Y.
Shandon School, Columbia, S. C.
Loew's Boulevard Theatre, New York, N. Y.
Metropolitan Life Insurance Building, New York, N. Y.
Translux Theatre, 49th Street, New York, N. Y.
Lincoln Bank Building, Brooklyn, N. Y.
Vitaphone Studios, Brooklyn, N. Y.
Warner Brothers Studio, Brooklyn, N. Y.
Radio Station WEBR, Buffalo, N. Y.
Empire Theatre, Mobile, Ala.
Yale University Buildings, New Haven, Conn.
Esquire Theatre, Chicago, Ill.
St. Mary's Church, Pontiac, Ill.
Technical High School, Springfield, Mass.
U. S. Post Office Building, New Bern, N. C.
Journal Building, Lincoln, Neb.
RKO Theatre, Trenton, N. J.
Post Office and Courthouse, Columbus, Ohio
City Hall and Courthouse, Easton, Pa.
Wooster College Auditorium, Wooster, Ohio
Easton Hospital, Easton, Pa.
State Teachers' College, Slippery Rock, Pa.
Grange Theatre, Philadelphia, Pa.
Midway Theatre, Philadelphia, Pa.
Court Rooms, Federal Court Building, New York, N. Y.
State Theatre, Amarillo, Tex.
Transmitter Building, WHN, Astoria, L. I., N. Y.
Fenimore Cooper School, East Chester, N. Y.
U. S. Customs and Courthouse Building, Mobile, Ala.
Knickerbocker Theatre, Nashville, Tenn.
French Casino, Washington Avenue and 12th Street, Miami Beach, Fla.
New Criterion Theatre, Broadway and 44th to 45th Sts., New York, N. Y.
Aluminum Company of America, New Kensington, Pa.
Drydock Savings Bank, New York, N. Y.
Federal Courthouse, Buffalo, N. Y.



Federal Courthouse Building, New York City
Cass Gilbert, Architect
Jas. Stewart & Co., Inc., Builders Executed by F. L. Hewes, Inc.
Ornamental Precast Sound Absorbing Ceiling Fabricated with Kalite Cast—Courtroom No. 3

Drydock Savings Bank, New York, N. Y.
Louis S. Weeks, Architect
Hegeman Harris Company, Inc., General Contractor
F. L. Hewes, Inc., Plastering Contractor

FIR-TEX

Super Insulating Board

NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS

There is a FIR-TEX Insulating Board for Every Purpose

FIR-TEX "F" FIRKOTE INSULATING SHEATHING

Standard Thickness: 25/32".

Sizes: 4′ x 7′, 4′ x 8′, 4′ x 8½′, 4′ x 9′, 4′ x 9½′, 4′ x10′, 4′ x 12′.

Description: Square edged. Every fibre waterproofed with asphalt fused under intense heat. Both surfaces are given additional waterproof treatment, then glazed for easy handling. The exposed surface is marked with guide lines for accurate nailing; also finished asphalt coated both sides and edges.

Uses: Exterior wall sheathing, exterior pitched roof sheathing, exterior finish. When applied, every edge rests on a wood nailing base, thus retarding the infiltration of wind, dust, heat, cold and noise.

See Sections I and II

FIR-TEX "L" INSULATING PLASTER BASE LATH

Standard Thicknesses: ½", ¾", 1".

Size: 18" x 48".

Description: Long edges shiplapped—ends square edged, thus insuring absolute insulation continuity.

Uses: Made especially to receive and hold plaster. Replaces ordinary lath for interior walls and ceiling.

See Section III

FIR-TEX "BC" IVRYKOTE AND COLORKOTE BUILDING BOARD

Glazed, washable surface; non-fading colors.

Standard Thicknesses: ½", 1".

Sizes: 4′ x 4′, 4′ x 5′, 4′ x 6′, 4′ x 7′, 4′ x 8′, 4′ x 8½′, 4′ x 9′, 4′ x 9½′, 4′ x 10′, 4′ x 12′.

Colors: Standard Ivrykote. Optional Colors: sky blue, apricot, apple green, shell, shell pink. Also available in natural tan without glazed, washable surface.

Uses: Interior finish, sound deadening and insulation of pitched roofs of frame buildings. For these uses, Fir-Tex building board insulates against heat, cold and sound at the cost of insulation alone.

Description: A square-edged building board in standard sizes listed above. Made from natural wood fibres, not reduced to cellulose by chemicals, and pressed into boards with tremendous insulating qualities.

See Sections IV, VII, VIII, IX and XIII

FIR-TEX "BEC" THRIFT WALL BOARD

Thickness: ⅜ in. only.

Sizes: Same as Fir-Tex Building Board. Because of its substandard thickness, Thrift Wall Board is not available in tile and plank.

Uses: For sound deadening between floors; for low cost construction; for temporary work.

Colors: Ivrykote and natural tan only.

See Section VIII

FIR-TEX "T" INSULATING TILE FOR INTERIOR FINISH

Colors: Fir-Tex "TC" Ivrykote and Colorkote, Fir-Tex "T" Natural Tan, or Fir-Tex "TS" sprayed with special acoustical paint in standard colors, namely: white, ivory, cream and buff.

Standard Thicknesses: ½", 1". Greater thicknesses on special order.

*Standard sizes.

Small Sizes: 6" x 6", 6" x 12", 8" x 8", 8" x 16", *12" x12", 12" x 24", *16" x 16", 24" x 24".

Large Sizes: *16" x 32", 18" x 32", *16" x 48", 18" x 48", 24" x 48", 48" x 48".

Uses: Decorative interior finish, wall and ceiling.

Description: Cut to rectangular shape, beveled on all four edges with a "AA" joint similar to a tongue and groove joint.

See Section V

FIR-TEX "P" INSULATING FINISH PLANK FOR INTERIOR FINISH

Standard Thicknesses: ½", 1".

Colors: Fir-Tex "PC" Ivrykote and Colorkote, Fir-Tex "P" natural tan.

Sizes: 6", 8", 10", 12", 16" wide by 6′, 7′, 8′, 8½′, 9′, 9½′, 10′, 12′ long.

Description: Long edges beveled and beaded with a "AA" joint similar to a tongue and groove joint.

See Section VI

FIR-TEX ACOUSTICAL PRODUCTS

Standard Thickness: ½ and 1 in.
Patterns: Tile, Plank and standard building board sizes as listed under each of these individual classifications.
Colors: White, cream, ivory and buff.

Uses: For sound absorption and control of the acoustics in stores, offices, theatres, churches, auditoriums, schools, broadcasting stations, etc., and other places where the control of sound is a factor.
Description: Standard Fir-Tex sprayed with special acoustical paint.

FIR-TEX "R" ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.
Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, under built-up roofing.
Description: A low density Fir-Tex Board of maximum insulating properties made in one homogeneous board up to 1½" without lamination.

See Sections XI and XII

FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.
Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, where severe conditions of moisture or humidity require a super-type of insulation.
Description: Fir-Tex Roof Insulation Board wrapped in waterproof paper and sealed.

See Sections XI and XII

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" and greater if required.
Sizes: 12" x 36", 18" x 36", 24" x 36", 24" x 48".

Uses: Especially made for normal refrigeration and cold storage jobs.
Description: Low density; high insulation value. Made in one homogeneous board up to 1½" without lamination.

See Section X

FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" only.
Sizes: 12" x 36", 18" x 36", 24"x 36", 24" x 48".

Uses: For severe service in cold storage work.
Description: Low density blocks wrapped in vapor-tight paper. Moisture-proof, water-proof, vapor-proof.

See Section X

FIR-TEX HARDBOARD PRODUCTS

Fir-Tex carries a full line of all standard Hardboard products in all standard thicknesses and sizes. These products include Hardboard (untempered), Tempered Hardboard, Hardwal, Super Hardwal, Tempered Hardboard Tile, Black Tempered Hardboard, Green Tempered Hardboard, and Exposition Flooring.

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PREFACE to FIR-TEX MASTER SPECIFICATIONS

In presenting these specifications, effort has been made to provide all clauses which in ordinary practice apply to average work. It is recognized that problems arise in individual jobs, which require analysis and special treatment. Any attempt to anticipate in these specifications every such problem would tend to complicate the specifications and confuse the reader. We request every architect to consult us freely on all matters pertaining to insulation of any description — write or wire

Engineering Dept.,
FIR-TEX INSULATING BOARD CO., INC.,
1108 Porter Bldg.,
Portland, Oregon.

EXTERIOR WALL SHEATHING

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and other areas to be covered.)
2. **Material:** Sheathing shall be Fir-Tex Firkote Sheathing $^{25}/_{32}$" thick, 4 ft. wide x length as best adapted to framing conditions.
3. Framing members shall be spaced accurately at not to exceed 16" O.C. 2" x 4" headers or cross members shall be installed as may be necessary, so that every end and edge of each Fir-Tex Firkote Sheathing Board shall rest on a nailing base.
4. **Application:** Insulation continuity shall be maintained, and all joints shall center over framing members. The Firkote Sheathing shall be applied with the length paralleling the framing members, and with the guide lines exposed for nail spacing. Boards shall be of sufficient length to completely span between sills and plates or other framing members. The boards shall be spaced approximately ⅛" apart at sides and ends, but brought to snug contact with door and window frames. **NEVER under any circumstances shall the boards be forced into place.**
5. **Nails:** 8 d. common nails shall be used.
6. **Nailing:** The intermediate members shall be nailed first, spacing nails 6" apart. The exterior members shall then be nailed, spacing nails 3" apart and ⅜" from the edge of the board. All nails shall be driven well home.
7. Flashings of the usual type shall be installed in the usual manner.
8. Exterior Finishes:
   (NOTE:—Fir-Tex is not a nailing base.)
   a. **Wood siding** shall be applied directly over the Firkote Sheathing, nailing through to the studs and using nails of sufficient length to penetrate 1" into the wood. All joints shall butt over the center of framing members.
   b. **Shingles or shakes:** Furring strips 1" x 2" shall be securely installed horizontally over the Firkote Sheathing, and spaced to fit the shingles or shakes, using nails of sufficient length to penetrate into the wood member at least 1". The shingles or shakes shall then be nailed to the furring strips.
   c. **Brick or Stone Veneer:** Metal ties or anchors of the usual type, properly spaced, shall be nailed through the Fir-Tex into the wood member, using nails of sufficient length to penetrate at least 1" into the stud. The masonry veneer shall be laid in the usual manner, allowing not less than ½" space between the face of the Fir-Tex and the back of the veneer.
   (NOTE:—It is not necessary to use building paper under any of the above exteriors—siding, shakes, masonry.)
   d. **Exterior Stucco:** All Fir-Tex surfaces beneath exterior stucco shall be covered with a continuous layer of asphalt-coated waterproof paper. The stucco reinforcing metal shall be applied with a furring nail of sufficient length to penetrate 1" into the wood member, and which will hold the metal tight and accurately in a position approximately ¼" from the face of the Firkote Sheathing, permitting the mortar to fill the space between the metal and the Fir-Tex.
   (NOTE:—Wood furring strips are not recommended because of their tendency to expand and crack the stucco when they become wet during the application of the stucco.)

SECTION II

EXTERIOR WALL FINISH

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

(NOTE:—Fir-Tex Firkote Sheathing is admirably adapted for use as an exposed exterior finish over frame construction in such cases as summer cabins, fishing and hunting lodges, dwellings on large construction projects.)

1. Framing, application, etc.: When Firkote is used as an exterior finish, the procedure in the main shall be as specified for sheathing application with the following exceptions:
   a. Nails shall be galvanized.
   b. Due care shall be exercised in the matter of spacing and application so that the battens covering joints shall be symmetrical.
   c. Firkote sheathing shall be of sufficient length so that no splice be used on any height 12′ or less.
   d. Painting: The Fir-Tex surface shall be given two coats of good lead and oil paint.
   Painting shall be done before application of battens.
   e. Battens and wood-trim shall be applied with nails of sufficient, length to penetrate at least 1" into the wood member.

SECTION III

PLASTER BASE

FIR-TEX "L" INSULATING PLASTER BASE LATH
Master Specifications
INSTALLATION AND APPLICATION INSTRUCTIONS

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Plaster Base shall be Fir-Tex Insulating Lath, (½") (¾") (1") thick, 18" wide by 48" long with shiplapped joints, delivered to the job in the manufacturers' original packages. All packages shall be opened and the contents exposed to the air 24 hours before application.
3. Framing members shall be spaced accurately at not to exceed 16" O.C.
4. **Application:** *Note:* In cold or damp weather, extra precaution shall be used. All doors and windows shall be in place and heating plant in operation before application. Plastering shall be commenced as soon as application is completed. Insulation continuity shall be maintained. Fir-Tex Insulating Lath shall be applied horizontally across framing members in a continuous line with all end joints staggered and centered on framing members. Apply ceilings first, walls second. In wall application, to insure a strong joint, always start at top of wall with ship-lapped edge down. Fir-Tex Lath shall be spaced ⅛" between ends and the ship-lapped edges shall be brought to moderate contact only. The Fir-Tex Lath shall be fitted closely to all openings and to all intersecting surfaces, **but in no case shall it be forced into place.** Where cutting is necessary, the Fir-Tex Lath shall be sawed with an ordinary carpenter's saw, or scored with a sharp hatchet and broken along the scored line. Where piecing is necessary, use only strips of Fir-Tex.
5. *The Fir-Tex Lath shall not be moistened.*

6. **Nailing:** Nails shall be ordinary galvanized shingle nails with ¼" heads, and of sufficient length to penetrate at least 1" into the framing members. The intermediate members shall be nailed first, using 5 nails to each member, and spacing nails approximately 4" apart, and in each case driving center nail first. Edge nails shall be approximately ⅜" from the edge.

7. **Reinforcing:** At all interior and exterior corners, a standard metal reinforcing shall be installed over the Fir-Tex Lath, and secured to the framing members. At all exterior corners, metal corner beads shall be installed over the reinforcing and secured to the framing members.

PLASTERING INSTRUCTIONS

1. *The Fir-Tex Lath shall not be moistened.*
2. Use only gypsum plaster.
3. The plaster shall be applied in standard three-coat job as follows:
   a. Scratch coat: Use one part by weight of gypsum plaster to two parts by weight of clean, sharp, well-graded sand. Add sufficient accelerator to obtain set in approximately one hour. Spread scratch coat very thin and even, pressing well into edges and joints. Allow to set hard before proceeding with the brown coat.
   b. Brown coat: Use one part by weight of gypsum plaster to 3 parts by weight of sand. Scratch and brown coats combined shall have a thickness of at least ⅜".
   c. Finish coat: This coat shall not exceed ⅛" in thickness, making the total plaster thickness not less than ½". This total thickness greatly prevents plaster defects due to normal building strain resulting from shrinkage, settlement and vibration.
4. Plaster shall be protected against freezings and dry-outs. Heat shall be provided in cold weather; in hot dry weather openings shall be covered.

(NOTE:—Due to the moisture-resistant properties of Fir-Tex Lath, all plaster moisture must be carried off by the air within the room, which fact requires that adequate ventilation be provided.)

SECTION IV

INTERIOR FINISH

FIR-TEX "BC" IVRYKOTE AND COLORKOTE BUILDING BOARD
(Mottled ivory, sky blue, apricot, apple green, shell pink — glazed washable surface—Non-fading colors)

Master Specifications

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Interior Finish shall be Fir-Tex Building Board (½"), (1") thick, 4' wide and of lengths best adapted to show a minimum of joints. Surface shall be (Fir-Tex "BC" Ivrykote—Colorkote—specify color).
3. **Framing:** Members shall be spaced accurately at not to exceed 16" O.C. Headers shall be installed back of all baseboards, chair rails and other heavy wood trim. Additional headers, studs and joists shall be installed where necessary. Framing members shall present a true, even surface.

3A. Alternate: Framing members shall be spaced accurately at not to exceed 16" O.C. Sound, dry, wood lining (here name any inexpensive dry material not to exceed 6" wide) of uniform thickness shall be installed horizontally on all walls and ceilings and spaced apart (here specify 3" if 6" material is used; 2" if 4" material is used). Shims shall be installed as may be necessary to provide a true even surface.

3B. Alternate: Masonary Walls: (1" x 2") (1" x 3") sound, dry wood furring strips shall be installed (vertically) (horizontally) securely to masonary walls (12") (16") O.C., and shimmed as may be necessary to present a true, even surface. Header strips of same material shall be installed as may be required to provide adequate support behind all heavy wood trim, and also behind all edges of every sheet.

4. **Cutting and Fitting:**
   a. Exposed joints: All cutting, bevelling, and grooving shall be done in a neat, workmanlike manner with special tools for that purpose.
   (NOTE:—Bevil Devil, Stanley Cutter, and sharp linoleum knife are all excellent tools.)
   b. Joints to be covered: Cutting may be either with special tools or with a sharp fine tooth saw, using rapid strokes with a minimum of pressure.
5. **Application:**
   a. All packages shall be opened and the Fir-Tex boards placed singly on edge around the room at least 24 hours before erection. In localities of exceptionally low humidity the back side of each board shall be moistened lightly and piled 24 hours before erection.
   b. The Fir-Tex boards shall be applied with length (paralleling) (at right angle to) the framing members with (Fir-Tex "BC"—Ivrykote) (Fir-Tex "B"—neutral tan) face exposed. All joints shall center over framing members.
   c. Spacing. Exposed joints: Fir-Tex boards shall be brought to moderate contact **but never forced into place.**
   Battened joints: Fir-Tex boards shall be spaced ⅛" apart.
   d. Nails: Shall be of sufficient length to penetrate at least 1" into wood member. Exposed nails shall be galvanized finish nails. Nails concealed by battens shall be galvanized shingle nails with at least ¼" head.

   e. Nailing: Intermediate members shall be nailed first, driving each nail at a slight angle and spacing them 6 inches apart. Exterior members shall then be nailed, driving each nail well home and spacing them 3" apart and ⅜" in from the edge. Same nailing, 3" apart, shall be done at edges of both ends. Once the first nail has been driven in a Fir-Tex board, all necessary nailing of that board shall be done before proceeding to the next. In no instance shall a Fir-Tex board be left partially nailed.
   f. Battens: (Wood) (Metal) Battens (size) and Wood Trim (specify kind, size, etc.) shall be installed with nails of sufficient length to penetrate at least 1" into the wood member.
   g. General suggestions: The following suggestions are recommended by sound, practical experience:
      (1) Plan your work carefully before ordering your Fir-Tex Boards. Purchase only those lengths best adapted to your particular job. The wide range of lengths available permits the reduction of joints to a minimum.
      (2) As a general rule, apply ceiling first and walls last.
      (3) Consider your spacing carefully before driving first nail. Usually a better appearance can be obtained by commencing work in center of area rather than at one end.
      (4) For best results, even when framing members are spaced 16" O.C., we suggest the wood lining as outlined in (3A) alternate, rather than headers as outlined in (3). In all cases where members are spaced greater than 16" O.C. or where members are irregular or uneven, the lining method shall be used. If there is a great deal of header and truing work to be done, the lining produces an incomparably better job and costs little more.
      (5) Where Fir-Tex Interior Finish is to be applied in a new building or one under construction, all doors and windows shall be in place and heating plant shall be in operation before Fir-Tex is delivered on the job. Care shall be exercised that Fir-Tex be not subjected to the moisture incidental to cement and plaster work. Such work should be completed and permitted to dry before Fir-Tex is brought on the job.
      (6) In those cases where transportation or other problems make it necessary to have Fir-Tex boards delivered to job in advance of its use, they shall be left in their tough original packages, and shall be stored in a clean, dry place.

INTERIOR FINISH—FIR-TEX-TILE

FIR-TEX "TC" (Ivrykote and Colorkote finish)

Select from following colors: ivory, sky blue, apricot, apple green, shell pink.

Master Specifications

1. **Work Included:**
(Here list and locate accurately the ceiling areas to be covered.)

2. **Material:** Ceiling covering shall be Fir-Tex Tile (½") (¾") (1") in thickness and (here specify size — see list of products, page 2) in size with bevelled edges and interlocking joints, delivered to the building site in manufacturer's original packages. Exposed surface shall be (Fir-Tex "TC" Ivrykote—Colorkote —specify color) (Fir-Tex "TS"—sprayed—specify color).

3. **Base:**

a. Where joists are exposed, or where plastered areas are uneven or in poor condition—

(1.) Solid wood base: Sound, dry lumber of uniform thickness (1" x 4") (1" x 6"), and (matched) (sized) shall be securely nailed to joists to form a continuous level nailing base. Shims shall be installed as may be required to accomplish this result.

(1A.) (alternate) Furring strips: Sound, dry lumber of uniform thickness (1" x 3") (1" x 4") shall be securely nailed to joists on centers to conform accurately with the Fir-Tex Tile size and design, but in no case to exceed 16" O.C.
(NOTE:—Best practice suggests a maximum of 12" O.C. Thus 16" x 32" Fir-Tex Tile would be applied to 8" centers rather than 16".)

b. Where plastered areas are level, true and in good condition—(See 5 b., this section.) Cementing under Application.

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner with special tools for that purpose. (Suggested tools are Bevil Devil, Stanley Cutter, sharp linoleum knife.)

5. **Application:**
a. (1) Fir-Tex Tile shall be laid in exact accordance with detailed drawings.

(2) Where ceiling is furred, Fir-Tex Tile shall be laid with long edges paralleling the furring strips. Where application is being made direct to plastered area or to solid backing, Fir-Tex Tile may be laid in any direction indicated.

(3) Spacing: Fir-Tex Tile shall be brought to snug contact, **but never forced into place.** All lines and grooves shall be kept straight and true.

b. Cementing: (This method is advocated in all better class work, but must be attempted only in cases where the plaster is level, even and true, or where adequate, dry, sound furring or solid backing has been installed. This method should be confined to those mechanics experienced in its use.)

(1) Adhesive: Adhesive shall be best quality acoustical cement. (Suggested brand—Atlas Acoustick made by Atlas Supply Co. of Manayunk, Philadelphia, Arco Dum Dum made by Arco Co. of Cleveland and Los Angeles, or other good acoustical cements. Sound practice suggests avoiding ordinary linoleum cements.)

(2) Spots of adhesive about the size of a half-dollar and at last ⅛" thick shall be applied to the back surface of Fir-Tex small Tile near each corner, and on Fir-Tex large Tile additional spots shall be applied not over 10 inches apart O.C. Press Tile into position, using a sliding sidewise motion, and hold until cement begins to set. (The use of an occasional brad to hold Fir-Tex in place while adhesive is setting is recommended.)

c. Nailing: Nails shall be spaced not over 6" apart where possible, and at each corner, using galvanized finish nails of sufficient length to penetrate at least 1" into the wood member. Nails shall be driven at slight angle, and kept ⅜" back from the bevel. (This method is sometimes used directly to the joists when spacing of joists coincides with size of tile; (Example: 16" x 32" Tile applied directly on joists spaced 16" O.C.) but best practice suggests that nailing always be done to solid wood backing or to wood furring strips.

d. Concrete construction: Area shall be inspected and shall be thoroughly clean. Low spots shall be treated with acoustical cement to bring them flush with surface. Fir-Tex Tile shall then be applied as outlined in 5. b. Cementing, this section.

SECTION VI

INTERIOR FINISH—FIR-TEX FINISH PLANK—FRAME CONSTRUCTION

FIR-TEX "PC" (Ivrykote and Colorkote finish)

Select from following colors: ivory, sky blue, apricot, apple green, shell pink.

Master Specifications

1. **Work Included:**
(Here list and locate accurately the wall areas to be covered.)

2. **Material:** Wall covering shall be Fir-Tex Finish Plank (½") (1") in thickness and (6") (8") (10") (12") (16") (combination of any or all) in width, and of lengths best adapted to show a minimum of joints.

(NOTE—Fir-Tex Finish Plank is available in lengths up to 12 ft. See list of Products, page 3. Surface shall be [Fir-Tex "PC" Ivrykote—Colorkote—specify color] [Fir-Tex "PS" Sprayed—specify color].)

3. **Framing:**
(NOTE:—Either of the two methods given below may be used, but the first is incomparably the better method and not a great deal more expensive.)

a. Sound dry wood lining of uniform thickness (here specify any inexpensive wood lining material. ½" x 6" S1S Dry Com. Fir Crating, or 1" x 4", or 1" x 6" S1S Dry Com. Fir) shall be securely nailed, horizontally, to framing members, spacing lining units (Solid base) (2" O.C.) (3" O.C.). Lining shall be shimmed as may be necessary to present a true-even surface.

b. Headers or cross members shall be installed between studding back of all baseboard, chair rail and other heavy wood trim. Additional headers shall be installed to provide adequate support for individual Fir-Tex Finish Planks.

(NOTE:—For best results, specify solid base, though it is thoroughly sound practice to space 4" lining 2" apart and 6" lining 3" apart. Lining wider than 6" had best be avoided when possible, as the narrower width makes a smoother wall.)

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner, with special tools for that purpose (Bevil Devil, Stanley Cutter, sharp linoleum knife).

5. **Application:**
a. Fir-Tex Finish Plank shall be applied with joints brought snugly together, but in no case forced into place.
b. Galvanized finish nails of sufficient length to penetrate one inch into the wood member, shall be driven at a slight angle, and spaced not to exceed 6" apart where possible.

6. **Application with Acoustical Cement:**
(NOTE:—This method is advocated on all better class work, but shall be attempted only where base is solid wood, wood lining, cement or plaster walls in good condition, and shall be confined to mechanics experienced in its use.)

a. Adhesive shall be best quality acoustical cement (suggested brand, Acoustick, made by Atlas Mfg. Co. of Manayunk, Philadelphia, Arco Dum Dum made by Arco Co. of Cleveland and Los Angeles, or other good acoustical cements). Sound practice suggests avoiding ordinary linoleum cements.

b. Spots of adhesive about the size of a half-dollar and at least ⅛" thick shall be applied to the back surface of each Fir-Tex Finish Plank near each edge, and not over 10" apart. Press Fir-Tex Plank into position using a sliding sidewise motion, holding in place until cement begins to set. (The use of an occasional brad to hold Fir-Tex in place while adhesive is setting is recommended.)

SOUND CONTROL ... Acoustical Correction

FIR-TEX "TS "ACOUSTICAL TILE
(Sprayed with Acoustical Paint)
FIR-TEX "PS" ACOUSTICAL PLANK
(Sprayed with Acoustical Paint)
FIR-TEX "BA" ACOUSTICAL BOARD
(Sprayed with Acoustical Paint)

Master Specifications

Fir-Tex Acoustical Products are available in a wide range of thicknesses, sizes, patterns and colors (See list of products, page 3), and are particularly adaptable for use in theatres, churches, auditoriums, gymnasiums, schools, restaurants, offices.

Each of these Fir-Tex products derives its acoustical qualities from millions of air voids or cells in each square foot of material and it has not been necessary to mar its surface with unsightly punctures in order to accomplish satisfactory results. The smooth, beautiful surface of Fir-Tex acoustical products benefits the architect in many ways and through him his client, viz:

1. The absence of surface defacement permits a wide range of possibilities in the matter of interior decoration which is thus accomplished at the cost of acoustical correction only.
2. The elimination of extra manufacturing expense enables Fir-Tex Acoustical products to be sold at a lower cost per unit of sound absorbed than many other comparable materials.
3. The fact that all Fir-Tex Acoustical products are uniform in thickness throughout the entire area of each unit means that thermal insulation is accomplished without any additional expense.
4. All Fir-Tex Acoustical products are exceedingly light in weight with the resultant advantages apparent to any architect. In some cases, comparable materials are more than twice the weight of Fir-Tex.

The efficiency of Fir-Tex Acoustical products even when applied directly to a concrete base, is shown in the following tables summarizing the results of sound absorption tests conducted by Electrical Research Products Co., Los Angeles, Calif.

Frequency of Test Tone	Coefficients of Sound Absorption		
	½" thick	1" thick	1½" thick
128 cycles	.17	.15	.18
256 cycles	.30	.52	.65
512 cycles	.47	.57	.65
1024 cycles	.41	.55	.60
2048 cycles	.47	.55	.58
4096 cycles	.49	.48	.52

SECTION VIII

SOUND CONTROL

Transmission of Sound through Partitions and Floors

FIR-TEX "BC" IVRYKOTE AND COLORKOTE BUILDING BOARD

FIR-TEX "B" BUILDING BOARD

FIR-TEX "BEC" IVRYKOTE THRIFT WALL BOARD

FIR-TEX "BE" THRIFT WALL BOARD

FIR-TEX "L" INSULATING PLASTER BASE LATH

FIR-TEX INSULATING INTERIOR FINISH (Fir-Tex "TC" Tile and Fir-Tex "PC" Finish Plank)

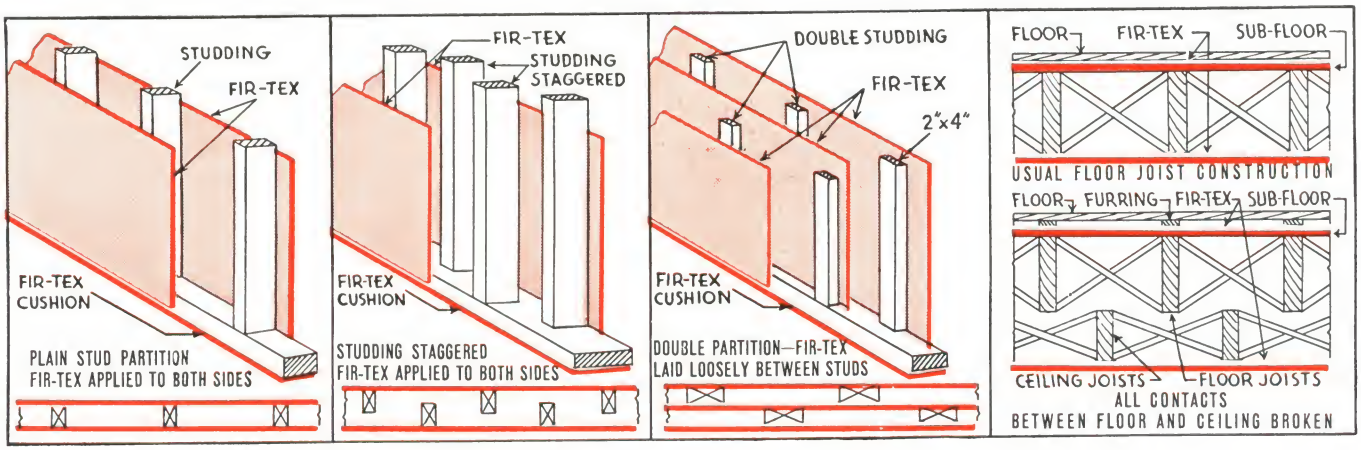
(NOTE—A single ½" thickness of Fir-Tex, used either as a plaster base or as interior finish, is more resistant to the transmission of sound than is ordinary wood lath and plaster. Used as a plaster base in the ordinary manner on all walls and partitions, Fir-Tex satisfactorily solves the usual problems of sound transmission within a home. For unusual conditions where more adequate sound deadening is required, the following drawings are submitted.)

Drawing No. 1 shows average partition with studs spaced 16" O.C., and with Fir-Tex applied to each side of the partition, either as Insulating Plaster Base Lath (see pages 4-5), or as Interior Finish (see pages 5-6), Building Board, Finish Plank and Tile, etc.). 2" x 4" top and bottom plates have been further cushioned by letting them rest on a narrow strip of ½" Fir-Tex Building Board just the width of the plate.

Drawing No. 2 shows 2" x 4" studding staggered on cushioned 2" x 6" top and bottom plates as illustrated. NOTE:—Here *each* wall area should be 16" O.C. which means the use of double the number of studding. This method is excellent procedure. It is so simple that it can be handled on any job, and does not greatly increase the cost. It will be found effective in silencing most of the usual problems.

Drawing No. 3 goes still further. Here cushioned 2" x 6" top and bottom plates, as illustrated, are used and for studding 2" x 2" or 2" x 4" are placed sideways and with each wall 16" O.C. In the space gained by using 2" studs is placed loosely a sheet of Fir-Tex Building Board. Each wall is then Fir-Texed either with Insulating Plaster Base Lath or Fir-Tex Interior Finish.

Drawing No. 4 shows normal joist construction in frame building where Fir-Tex Insulating plaster Base Lath and plaster or Fir-Tex Interior Finish has been applied to the underneath side of the joists making finished ceiling for the room below. Top side of the joists have been treated in either of two ways: (See next page.)



1. 1st, wood sheathing sub flooring applied directly to joists and nailed securely; 2nd, Fir-Tex Building Board or Fir-Tex 3/8" Lokost Wall Board has been laid on top of sub floor and tacked lightly in place; 3rd, finish floor has been laid over Fir-Tex and nailed securely through the Fir-Tex into the wood sheathing, using nails of sufficient length to penetrate 1" into the wood member.
2. 1st, Fir-Tex Building Board or Fir-Tex 3/8" Lokost Wall Board has been laid over joists with edges centering over framing members and tacked lightly in place; 2nd, wood sheathing sub flooring has been laid over Fir-Tex and nailed securely through the Fir-Tex into the joists; 3rd, finish floor has been laid over the sub floor and nailed securely in place.

The first method is preferable in practically all cases.

Drawing No. 5 (see page 7) shows method commonly used to overcome unusual problems of sound transmission through floors. 1st, two sets of joists are used. One set, employed as floor joists, is hung in the usual manner 16" O.C. and bridged. The second set, employed as ceiling joists of the room below, is hung independently, staggered between the floor joists, and bridged. This construction of itself acts in the same manner as staggered studs and prevents sound being "telegraphed" from one room to the other. There must be no contact between the two sets of joists or bridging. The Fir-Tex treatment is as follows: Ceiling of room below—Fir-Tex is applied to underneath side of ceiling joists either as Fir-Tex Insulating Plaster Base Lath (see pages 4-5) or as Fir-Tex Interior Finish (see pages 5-6). Floor of room above — 1st, wood sheathing sub floor has been applied in the usual manner and nailed securely to the joists. 2nd, Fir-Tex Building Board or Lokost Wall Board in large sheets has been laid on top of the sub floor, sheets being spaced approximately 1/8" apart at ends and sides, and tacked lightly in place. Next 1" x 3" sound, dry wood furring strips or sleepers (such as 1" x 3" No. 1 Com. Dry Douglas Fir S1S to 3/4" or 25/32") of uniform thickness have been laid 16" O.C. on top of the Fir-Tex and nailed securely with nails spaced 48" apart and reaching through the sub floor. Last, the finish floor is laid in the usual manner directly to the sleepers.

Architects will be pleased with the results accomplished in the isolation of a room if they employ a combination of staggered stud walls and floating joists.

SOUND TRANSMISSION TESTS
Conducted by Electrical Research Products Co.,
Los Angeles, Calif.

Frequency of Test Tone	Transmission Loss in Decibels	
	1/2" thick	1" thick
128 cycles	18.6	14.5
256 cycles	18.8	15.4
512 cycles	21.0	19.9
1024 cycles	24.2	27.8
2048 cycles	30.2	33.2
4096 cycles	28.4	32.6

SECTION IX

PAINTING AND DECORATION OF FIR-TEX

Fir-Tex Ivrykote and Colorkote Interior Finish is factory finished and ready for use when delivered on the job. The glazed washable surface in choice of attractive non-fading colors requires no further color treatment and will endure for a long time to come. When it does require redecorating, the following suggestions will be helpful.

Cold Water Paints: The surface of Fir-Tex Interior Finish lends itself admirably to application of paints and calcimines of all grades.

Recent developments in the casein base paint field have been so rapid and so highly successful that the use of these paints in preference to paints of other base and ordinary calcimines is increasing rapidly. There are many good casein base paints on the market today. Some of them are Laux Vello, Rayolite, Muraltone, Hylite, Luminall and Sunflex. For best results the paint is applied directly to the Ivrykote surface of Fir-Tex which has been factory sized and baked. Two coats produce a most pleasing result. Some painters will sand very lightly the first coat before applying the second, using a fine sandpaper, but this step may be omitted. These paints will be found very inexpensive and their coverage is highly satisfactory. One advantage is that successive coats may be applied many times when redecorating, without chipping or scaling.

Oil or Varnish Paints: Fir-Tex Ivrykote and Colorkote is factory presized. Sandpaper lightly between coats for best results. We suggest that oil and varnish paints be used only when some special result is desired. Under all normal conditions casein paints will produce much more pleasing results as well as being less expensive.

Plastic Paints: The best plastic paints for use over Fir-Tex are casein base, such as Laux Blue Label Wall Texture. When mixed with cold water in accordance to manufacturer's recommendations, they form a thick paint which can be textured by manipulation of the brush, celluloid triangle, etc. When dry, this surface is given a coat of casein paint or other treatment. This work should be completed before application of mouldings or battens over the joints.

Stencils: Many interiors can be toned up and made more attractive by utilizing stencils, particularly on borders. Pleasing stencil patterns will be found in local paint or wall paper stores. They should be cut from oil paper (or metal, if used many times) and held in place by hand or with thumb tacks while the color is being applied. Colors ground in Japan are most satisfactory, thinned to the desired consistency with mixture of 6 parts turpentine, 3 parts linseed oil, 1 part Japan drier.

Wall Coverings: Fir-Tex Ivrykote and Colorkote presents the best surface for wall paper or other coverings. Its surface has been factory presized and lends itself to a smooth, even job. The procedure is as follows:

1st. Apply Fir-Tex Building Board to framing members as in Section IV but using galvanized headed nails as in paragraph 1, this section.
2nd. Treat nail heads as in paragraph 1, this section.

Ceiling Dome, Portland, Oregon Rollerdrome

3rd. Apply wall paper in usual manner making sure that you can locate all joints even after they are covered.
4th. Treat all joints in Fir-Tex with wood or metal mouldings or batten strips. Paint mouldings before they are applied rather than afterwards.

Joint Treatment: With coarse sandpaper rub down an area from 4 inches to 6 inches wide at the joints. Strip these joints with galvanized annealed wire mesh, 12 or 16 to the inch, bonding the screening to the Fir-Tex with bonding cement. The wire mesh should not be nailed or tacked in place except when starting a joint and occasionally on ceiling strips to hold in place while applying cement. Hold one end of strip while the bonding cement is applied to the surface of the wire and pressed through the mesh with a 4-inch painter's scraping knife. Spread the bonding cement beyond the edges of the screen for not less than 1 inch so that the edge of the wire cloth will not show through the plastic paint finish. In bonding the wire over the joints, press firmly against the Fir-Tex and fill mesh well with the bonding cement applied in the consistency of putty. Apply, similarly, a strip of wire cloth bent around all corners and re-entrant angles.

Nail Heads: When refinishing Fir-Tex Interior Finish, first make sure that all nails are driven well home. Then treat each nail head and hole with Swedish putty or some prepared spachtling compound using an ordinary putty knife. This material is pressed well into the crevices, smoothed off with putty knife, and permitted to dry thoroughly. The surface is then sanded level and true, using No. 1 sandpaper on wood block.

(CAUTION:—You will note that this treatment of nail heads is to be used *only* when the Fir-Tex Interior Finish is to be painted or covered and not when it is to be used in its natural finish.)

REFRIGERATION AND COLD STORAGE INSULATION

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS
FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION

Master Specifications

(NOTE:—No single specification can be adopted for general use. Each job must be analyzed before specific thicknesses can be recommended, due to different types of construction and thickness of the walls in the building in which Fir-Tex is to be used. For detailed information, write to the Engineering Dept., Fir-Tex Insulating Board Co., 1108 Porter Bldg., Portland, Ore. Give all the particulars in your possession, such as: building already constructed, or to be constructed; frame, tile, brick or concrete; number of stories; size, location and exposure of room or rooms in building, temperatures to be maintained; size and kind of ice machines.)

CONCRETE CONSTRUCTION

1. **Work Included:**
(NOTE:—Here list and locate accurately the wall, floor and ceiling areas to be insulated, specifying in each instance the total thickness of Fir-Tex Insulation to be used and the number of layers in which it shall be applied.)

2. **Material:** Insulation shall be Fir-Tex ("Z" Refrigeration Insulation Blocks) ("ZV" Refrigerator and Cold Storage Low Temperature Insulation wrapped in vapor tight paper), (here specify) inches in thickness, and (12″ x 36″) (18″ x 36″) (24″ x 36″) (24″ x 48″) as best adapted to the particular area to be insulated. Asphalt shall be an approved grade of odorless asphalt having melting point of between (160°) and (200°) F.

3. **Cutting and Fitting:** All cutting and fitting shall be done in a neat workmanlike manner. Cutting shall be done with a sharp, fine tooth saw, using rapid strokes and a minimum of pressure.
(NOTE:—When electricity is available, a portable power saw does an excellent job and speeds up the work.)

4. **Base:** All surfaces shall be thoroughly dry, smooth, clean, and free from grease or paint. All rough surfaces and hollows shall be trued up with waterproofed Portland Cement which shall be allowed to dry thoroughly before proceeding.
(NOTE:—The above is for use in existing concrete buildings. When the architect is supervising the erection of the building as well as the insulation, he can control the entire problem. In such cases he will find the following suggestions helpful:
   a. All walls, floors and ceilings of area which is to be insulated, shall be poured with integrally waterproofed concrete.
   b. All surface areas shall be finished off smoothly to present an even surface for the application of Fir-Tex.
   c. In cases where the soil is other than sand and gravel, he will find the following good practice for the floor slab:
      (1) Spread 4″ of cinders or gravel over the area to be covered.
      (2) Pour 2″ of integrally waterproofed concrete over cinders or gravel.
   d. Be sure that all concrete is cured and thoroughly dry before permitting next step.

5. **Application Floor:**
   a. Entire floor area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Floor area shall then be flooded with smoking hot asphalt, using 35 lbs. asphalt per 100 sq. ft. Only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time.
   c. Fir-Tex sheet shall then be firmly embedded in the hot asphalt, spacing sheets ⅛″ apart. Asphalt shall be thick enough on floor to squeeze up through joints.
   d. When entire floor area has been covered with Fir-Tex, successive layers shall be applied in same manner, each time flooding the exposed area of the preceding layer with 35 lbs. per 100 sq.ft. smoking hot asphalt, and then embedding Fir-Tex sheet, making sure that each layer be staggered to break all joints of preceding layer.
   e. When final layer has been embedded in the hot asphalt of preceding layer, all open joints shall be filled or calked with ground-up Fir-Tex fibre mixed with asphalt. Exposed area of this top layer shall then be flooded with two successive coats of smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft. to each coat. When top layer has cooled, it shall be dusted with Portland Cement.
   f. Concrete finish floor: Three inches of integrally waterproofed cement shall next be poured on top of the finished Fir-Tex floor. This concrete shall be reinforced with (here specify gauge, size of mesh, etc.) metal reinforcing, care being taken that reinforcing be held at least 1″ off the floor.
(NOTE:—This may be accomplished either through using self-furring mesh or by the applicator digging into the concrete (as it is poured) with the claws of his hammer and lifting the mesh until it is suspended in the mass of concrete.)

6. **Application—Walls and Ceiling:**
   a. Entire wall and ceiling area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Using ice picks to hold the Fir-Tex, dip in hot asphalt until the bottom surface and all edges are thoroughly coated. Then lift the Fir-Tex and apply to wall or ceiling. Each sheet shall be held firmly in place until asphalt has cooled enough to support the sheet. Sheets shall be spaced ⅛″ apart at sides and ends. Extreme care should be exercised that no air spaces form between wall and Fir-Tex or between successive layers of Fir-Tex. This is accomplished by sliding Fir-Tex into place.
      Start at top of wall and work down to avoid drippings of asphalt collecting on surfaces. Remove any drippings which may collect on concrete to avoid air spaces between Fir-Tex and concrete.
   c. Succeeding layers of Fir-Tex shall then be applied in the same manner, each sheet being dipped in the smoking hot asphalt and held in place by butcher skewers or galvanized nails. Sheets shall be spaced ⅛″ apart and staggered to break all joints of preceding layer.
   d. Exposed surface of last layer then shall be sprayed with smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft.

7. **Surface Finishes:**
All exposed wall and ceiling surfaces shall be given a finish of not less than ⅛-inch of an approved asphalt mastic or not less than ½-inch of integrally waterproofed Portland Cement plaster applied in two coats and reinforced with light wire mesh. External corners shall be protected with metal corner beads.

SECTION XI

INSULATION OF FLAT DECKED ROOFS
(Of Steel, Concrete, Structural Gypsum or Unit Tile under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION
FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION
(NOTE:—Where high humidities are maintained, use vapor cut-off as in Section XII, No. 6A.)

1. **Work Included:**
(NOTE:—Same as Master Specifications Section XII, No. 1.)

2. **Insulation Material:**
(NOTE:—Same as Master Specifications Section XII, No. 2.)

3. **Wood Nailing Strips:**
(NOTE:—Same as Master Specifications Section XII, No. 3.)

4. **Roof Deck:**
   a. General: The surface of the roof deck shall be thoroughly dry and broomed clean, free from dirt and loose material and all rough spots shall be removed. Where deck is of tile construction, the joints of all tiles shall be properly pointed up.
   b. Application:
      (1) Priming the Deck: Deck shall be thoroughly primed with cut back asphalt (asphalt emulsion diluted with water).
      (2) Mopping the Deck: Deck shall then be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft.
(NOTE:—In tile construction, spot or strip mop the individual tiles or units.)
Only sufficient area to provide complete embedment of each Fir-Tex sheet shall be mopped at one time. Each Fir-Tex sheet shall then be firmly embedded in the hot asphalt mopping. In the case of two layer insulation, the first layer shall be mopped in the same manner as the deck and the second layer then embedded in the hot mopping.

INSULATION OF FLAT DECKED ROOFS
(Of Wood under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION
FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION

Master Specifications

1. **Work Included:**
(NOTE:—Here list and locate accurately the roof areas to be covered. If different thicknesses are required on some of the areas, list and locate each area separately.)

2. **Insulation Material:** Roof Insulation shall be (Fir-Tex "R" Roof Insulation) (Fir-Tex "RV" Vaporproof Roof Insulation) (½") (1") (1½") (2") thick, 22" x 47", with (square) (offset) edges, and laid in (one) (two) layer(s).

3. **Wood Nailing Strips:**
(NOTE:—Fir-Tex is not a nailing base. Therefore, wood strips, securely nailed or bolted, shall be provided to serve as adequate nailing base for all flashings, metal work, etc.) (Architect will here insert his instructions that this work be done before roofing crew comes on the job. This work is usually done by the general contractor.)

4. **General:** All Fir-Tex shall be kept dry before, during, and after its application. Only as much Fir-Tex shall be applied in any one day as will be covered by the finished roofing that same day. Fir-Tex sheets shall be laid in parallel courses, staggered to break joints, and shall be spaced ⅛" apart at sides and ends. When applied in two layers, the Fir-Tex sheets in the second layer shall be laid parallel with those of first layer and staggered to break all joints. Where the roof meets vertical surfaces such as parapets, etc., the Fir-Tex sheets shall be cut and fitted snugly in a neat workmanlike manner, but never forced into place.

5. **Roof Deck:** The surface of the roof deck shall be thoroughly dry and shall be broomed clean and free from dirt and loose material. All loose or springy boards shall be securely nailed before Fir-Tex is applied.

6. **Building Paper:**
The entire roof area shall be covered with (rosin sized building paper) (6 lb. coated felt), lapped half, making two plies. Nail sufficiently to hold in place until the Fir-Tex is laid over it.

6A. (alternate) **Vapor Cut-off:**
(NOTE:—Use this clause only where high humidities are maintained and prevention of condensation is necessary.)

The entire roof area shall be covered with asphalt prepared roofing 34 lbs. per square and having one side coated. Lay coated side down and lapped half, making two plies. Nail the back edge of each sheet with tin capped, galvanized, barbed roofing nails spaced 12" O.C. All laps shall be mopped back 12" with hot asphalt. Do not mop over this membrane until just prior to the laying of the Fir-Tex.

7. **Application of Fir-Tex Roof Insulation:**
   a. When laid in one layer over building paper—
      (1) Nails shall be galvanized roofing nails with 5/16" heads and of sufficient length to pass through Fir-Tex and penetrate at least 1" into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
      (2) Nailing: Each Fir-Tex sheet shall be secured in place by nails spaced 12" apart along each edge and staggered along the longitudinal center line.
      (3) Mopping: After Fir-Tex has been nailed in place, the exposed surface shall be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft., and the first layer of roofing felt shall be embedded in the asphalt while hot.
   b. When laid in two layers—
      (1) Nails shall be galvanized roofing nails with 5/16" heads and of sufficient length to pass through both layers of Fir-Tex and penetrate at least 1" into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
      (2) Nailing shall be through the top layer only, spacing to be same as one layer method in 7. a. (2).
   c. When laid in one layer over Vapor Cut-off—
      The exposed area shall be mopped liberally with hot asphalt, only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time. The Fir-Tex sheet shall then be embedded firmly in the mopping while still hot.
   d. When laid in two layers over Vapor Cut-off—
      (1) First layer of Fir-Tex shall be applied as 7c. above.
      (2) Exposed area of applied Fir-Tex shall then be mopped as before and second layer embedded.
   e. Water Cut-offs—
      NOTE:—Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage to the roofing or defective flashings, parapet walls, copings, etc.
      The insulation, whether laid in one (1) or two (2) layers, shall be cut to the line designated for the water cut-off.
      Water cut-offs shall consist of strips of (coal tar pitch) (asphalt) saturated roofing felt 8" to 10" wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.
      They shall be located approximately 24" from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30' on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.
      At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

SECTION XIII

INSULATION OF PITCHED ROOFS OF FRAME BUILDINGS

FIR-TEX "B" BUILDING BOARD
FIR-TEX "F" FIRKOTE SHEATHING

Master Specifications

1. **Work Included:** (Here list and locate accurately the roof areas to be insulated.)

2. Insulation shall be Fir-Tex ("B"—½" Building Board) ("B" —1" Building Board) ("F"—25/32" Firkote Sheathing).

3. **Framing:** Rafters shall be accurately spaced (specify) inches on centers.
(NOTE:—In many sections rafters are spaced 24" O.C. even though studs, joists, etc. be spaced 16" O.C.) Additional 2" x 4" headers or cross members shall be installed as may be required to serve as nailing base for all ends of Fir-Tex sheets.

4. **Application:** Large Fir-Tex sheets of lengths best adapted to cover area with fewest possible joints shall be applied directly to top of rafters, with all side and end joints centering over wood members, additional nailing members being inserted wherever necessary and nailed sufficiently to hold in place until wood roof sheathing or shingle lath has been applied.

5. **Shingle Lath:** Wood strips (specify) x (specify) inches of (specify) grade shall be applied directly over the Fir-Tex, spaced (inches O.C.) (to conform with shingle units), and nailed securely through the Fir-Tex and into the wood members with nails of sufficient length to penetrate at least 1" into the wood member. All ends of Fir-Tex sheets shall be nailed securely to cross member over which they center, this nailing to be done through the shingle lath when lath spacing coincides with Fir-Tex joint, or otherwise directly through the Fir-Tex.

6. **Shingles:** Shingles shall be applied directly to shingle lath as in usual practice.

(NOTE:—The above specifications cover the normal pitched roof of frame building under wood shingles. If rigid asbestos shingles, slate or tile roofing is used, a continuous course of good quality waterproof felt, well lapped, shall be applied over the Fir-Tex and under the wood strips. If composition roofing or asphalt shingles are used, a solid base of D & M wood sheathing shall be substituted for the wood strips and the waterproof felt applied over the sheathing.)

ADVANTAGES OF FIR-TEX SEMI-RIGID INSULATION BOARD OVER OTHER TYPES OF INSULATION

1. Greater strength.
2. Once in place, always in place. Fir-Tex is an integral part of home. In case of alteration or repairs when opening is made in ceilings and sidewalls, there is no trickle of Fir-Tex because Fir-Tex is a building *board*.
3. Fir-Tex does not creep or settle. Fir-Tex is nailed solidly to framing members and is a permanent part of the building and remains where put. Vibrations caused by trucks and street cars, etc., have no settling effect on Fir-Tex insulation board.
4. With Fir-Tex there are no spaces for moths or other insects to crawl through and make their nests.
5. Fir-Tex sheets being semi-rigid are easy and clean to handle. One man can lift and apply a large sheet because it will support its own weight while being nailed.
6. Fir-Tex provides an unbroken area of uniform insulation continuity. This is particularly true when Fir-Tex is used as a plaster base as the mechanic necessarily must insulate from floor to ceiling and from eave to eave.
7. In most cases, Fir-Tex takes the place of some other building material and provides both insulation and building material at the cost of insulation alone. This also eliminates one cost of application.

TESTS

Sound transmission tests of Fir-Tex are given on page 8; sound absorption tests on page 7. Below are results of other important tests made September 21, 1937, by Robert W. Hunt Company, Engineers, Chicago, Illinois and by other competent authorities. Additional information may be obtained by writing the Engineering Department, Fir-Tex Insulating Board Co., Inc., 1108 Porter Bldg., Portland, Oregon.

TENSILE TESTS

	½" Ivrykote Building Board Average thickness 0.495"		1" Building Board 13-lb. Material Average thickness 1.10"	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Tensile Strength Lbs. per square in.	283 278 286	281 273 276	53.4 50.0 54.5	79.5 79.5 81.8
Average	282	277	52.6	80.3
Average of three longitudinal and three crosswise tests	279		66.4	

THERMAL CONDUCTIVITY TEST

Guarded hot plate method, oven dried specimen

	½" Building Board	1" Building Board 13-lb. Material
Mean Temperature—°F.	75	75
Thickness—Inches	0.490	0.975
Density—Lb. per cu. ft.	15.5	12.3
Conductivity—B.t.u. per hour per sq. ft. per degree. F. diff. in temp.	0.654	0.305
Conductivity calculated to a 1" thickness	0.320	0.298

PLASTER BOND TEST

½" Fir-Tex Lath, Sample 6"x6" — Pounds per sq. ft. 993-928; Average 961

LINEAR EXPANSION

Expansion in changing from 50% to 97% relative humidity.

	½" Ivrykote Building Board			1" Building Board 13-lb. Material		
	Longitudinal	Crosswise	Average	Longitudinal	Crosswise	Average
% elongation in 10"	0.13	0.15	0.14	0.075	0.075	0.075

ABSORPTION TEST

Dried at 160° F. for 24 hours, 2 hours immersion in water at 70° F.

	½" Ivrykote Building Board	1" Building Board 13-lb. Material
% absorption by volume	4.3	3.1

TRANSVERSE TESTS

Specimens 3" wide by 18" long, supported on 12" span, load concentrated at mid-span.

	½" Ivrykote Building Board		1" Building Board 13-lb. Material	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Maximum load—lbs.	20.0 20.0 18.8	20.4 20.0 18.3	17.4 16.9 16.7	24.2 23.6 24.4
Average	19.6	19.6	17.0	24.07
Average of three longitudinal and three crosswise tests	19.6		20.6	
Maximum deflection—inches	0.985 0.975 1.010	1.05 1.06 1.05	0.421 0.398 0.328	0.328 0.508 0.453
Average	0.987	1.05	0.382	0.430
Average of three longitudinal and three crosswise tests	1.02		0.406	

FIR-TEX

FIR-TEX

NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS

Fir-Tex is made in the heart of the great lumber producing country of the Northwest. Here are trees that have taken hundreds of years to grow. Fir-Tex shreds the sound strong wood and interlaces the fibres to produce an insulating board with millions of air cells per square inch of the material. These myriad air cells are what gives such tremendous insulating properties to Fir-Tex.

There are other fine insulating boards but Fir-Tex is unexcelled for insulating value, for strength, for durability. Fir-Tex superiority is due to:

1. Fir-Tex is all wood, made from sound wood fibres in the natural fibre length.
2. Each individual fibre is thoroughly sterilized and waterproofed in the manufacturing process so there is no tendency in the finished product for dry rot to set in or the growth of fungus to develop or for the fibres to provide or harbor food for insects or vermin.
3. In no instance has the physical color been obtained by the introduction of any chemical or extraneous matter. The light tan color results from the removal of the natural tannic acids and resins. On the Fir-Tex boards used for interior finish, the beautiful Ivrykote and Colorkote finish is applied at the plant by coating the surface with the highest quality casein colored painting material. The colored surface is glazed and can be washed many times without discoloration.

Fir-Tex is made by the Fir-Tex Insulating Board Company in a $2,500,000 plant located on the Columbia River near St. Helens, Oregon. The product is distributed throughout the United States and many foreign countries by Dant & Russell, Inc., Portland, Oregon, through following:

Consult your local lumber dealer listed under Fir-Tex in the phone book or any of the following sales representatives:

Sales Representatives

FIR-TEX OF COLORADO
412-413 Denham Building
Denver, Colorado

FIR-TEX OF FLORIDA
P. O. Box No. 901
Fort Lauderdale, Florida

FIR-TEX OF GEORGIA
211 Red Rock Building
Atlanta, Georgia

FIR-TEX OF ILLINOIS
1000 North Ogden Avenue
Chicago, Illinois

FIR-TEX OF IOWA-NEBRASKA
4824 Chicago Street
Omaha, Nebraska

FIR-TEX OF MARYLAND
506 South Central Avenue
Baltimore, Maryland

FIR-TEX OF MICHIGAN
423 Penobscot Building
Detroit, Michigan

FIR-TEX OF MINNESOTA, INC.
704 Vandalia Street
St. Paul, Minnesota

FIR-TEX OF MISSOURI
Roosevelt Building
St. Louis, Missouri

FIR-TEX OF MISSOURI-KANSAS
1805 Grand Avenue
Kansas City, Missouri

FIR-TEX OF NEW ENGLAND
Rutherford Avenue
Charlestown, Massachusetts

FIR-TEX OF NO. CALIFORNIA
461 Market Street
San Francisco, California

FIR-TEX OF SAN JOAQUIN VALLEY
c/o Sperry Warehouse
Butler and O Streets
Fresno, California

FIR-TEX OF SO. CALIFORNIA
1515 E. 7th Street
Los Angeles, California

FIR-TEX OF WASHINGTON, INC.
1121 Smith Tower
Seattle, Washington

FIR-TEX METROPOLITAN, INC.
144 East 36th Street
New York, N. Y.

FIR-TEX SALES COMPANY
P. O. Box No. 1790
Birmingham, Alabama

FIR-TEX SALES COMPANY
911 Guilford Building
Greensboro, North Carolina

FIR-TEX WESTERN
11415—86th Street
Edmonton, Canada

DWIGHT HINCKLEY LUMBER CO.
4223 E. 49th Street
Cleveland, Ohio

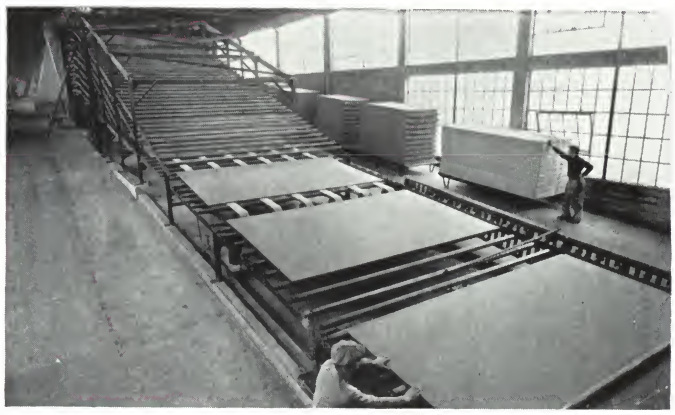
MORRISON-MERRILL & CO.
Salt Lake City, Utah

PENN-NEW YORK FIR-TEX, INC.
110 Pearl Street
Buffalo, New York

PITTSBURGH BUILDING SPECIALTIES CO.
524 Fourth Avenue
Pittsburgh, Pennsylvania

MILAN R. SUTLIFF COMPANY
Ashland, Wisconsin

P. C. THEDE
Mills Building
El Paso, Texas



After the wood fibres are sterilized, felted and pressed into boards, they emerge from a battery of dry kilns, ready for shipment to all world markets.

Warehouse at the plant, St. Helens, Oregon.

$2,500,000 plant of the Fir-Tex Insulating Board Company, St. Helens, Oregon.

FIR-TEX INSULATING BOARD COMPANY

DANT & RUSSELL, INC.

NATIONAL DISTRIBUTORS **PORTLAND, OREGON**

THE FLINTKOTE COMPANY

50 West 50th Street, NEW YORK, N. Y.

BRANCH OFFICES

ATLANTA, GA., 1215 Sylvan Road, S. W.
BOSTON, MASS., 826 Park Square Bldg.
CHICAGO, ILL., 624 So. Michigan Ave.
DETROIT, MICH., 14201 Schaefer Highway
NEW ORLEANS, LA., Poland and Galvez Sts.
WACO, TEX., 402 Superior Life Bldg.

PIONEER DIVISION—LOS ANGELES, CAL.

For Flintkote Asphalt and Asbestos Shingles and Sidings, Roll and Built-up Roofings, Rock Wool Insulation and Asphalt Emulsions, see File Index

FLINTKOTE INSULATION BOARD

CHARACTERISTICS

Flintkote Insulation Board (Cane-ite) is a rigid insulation made from cane fibre (bagasse) firmly felted into a solid sheet. It is a light natural cane color. An ivory finish is also available on certain products. (See table.) The thermal conductivity of rigid insulation for computation purposes as shown in the "Guide" of the A. S. H. V. E. is .33 B.t.u.'s per hour, per square foot, per degree difference in temperature Fahrenheit, per inch thickness. All Flintkote Insulation Board is made termiteproof by an exclusive process, and is also treated to prevent dry rot decay. Available in a variety of forms especially cut to size for different purposes, its uses may be divided generally into two classes:—Structural and Non-structural (interior finishes, etc.).

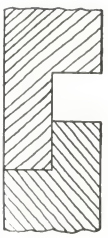
STRUCTURAL USES

Asphalt Coated Sheathing Board

Use—Completely coated with waterproofing asphalt and surfaced on one side with aluminum powder, Flintkote $\frac{25}{32}$-in. Asphalt Coated Sheathing Board combines effective insulation with rigidity and strength as a sheathing for sidewalls.

Sizes—4 ft. wide and 7, 8, 8½, 9, 9½, 10 and 12 ft. long; $\frac{25}{32}$ in. thick to accommodate standard door and window frames.

Application—Easily cut with a saw, Flintkote Asphalt Coated Sheathing Board may be nailed directly to the framing members. It is not a nailing base. Shingles should be applied to furring strips nailed over the sheathing board.



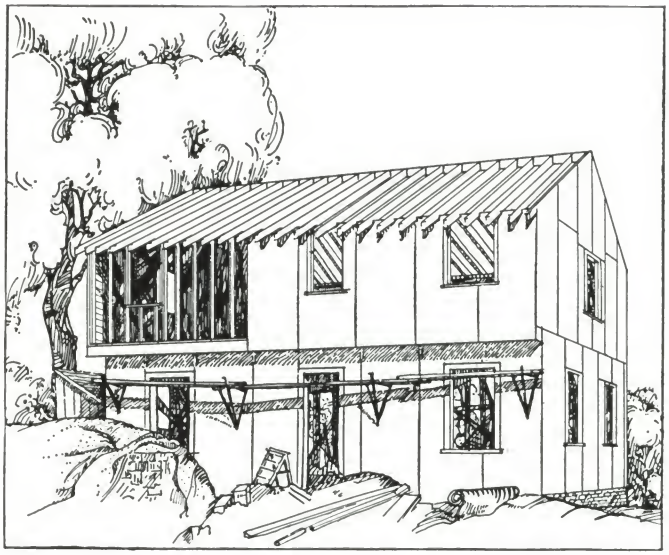
Horizontal Lath Joint

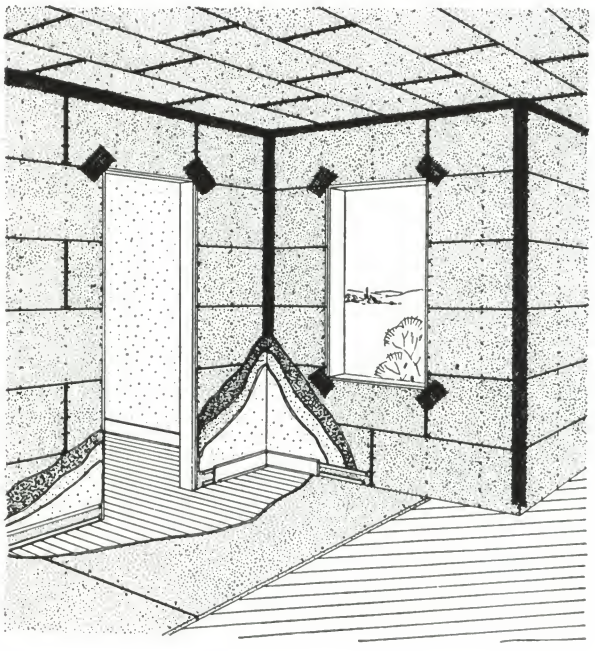
Insulating Lath

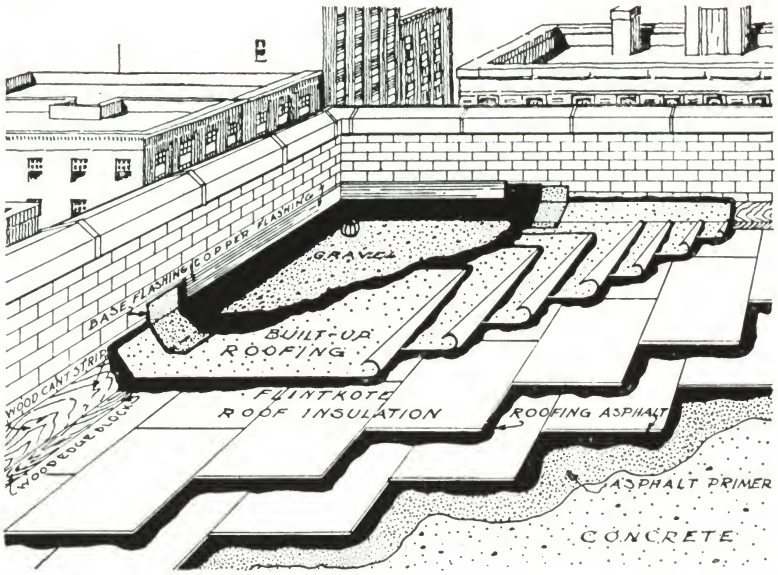
Uses—Insulating Lath is available in small size units with special joints to provide reinforcing plaster keys. It provides an excellent plaster base in addition to insulation.

Sizes—Insulating Lath is available in standard size of 18 x 48 in. in ½ and ¾-in. thicknesses.

Application—Insulating Lath should be kept dry at all times, and applied with long edges at right angles to vertical studs and joists, with joints staggered in thirds. Standard gypsum or wood fibre plaster should be used on scratch or brown coats and a minimum thickness of ½-in. plaster should be maintained at all points.







Built-up Roof Insulation

Uses—Roof Insulation is intended for use as insulation under built-up roofing only.

Sizes—Available in 22-in. width and 47-in. length in ½, 1, 1½ and 2-in. thicknesses.

Application—Roof Insulation may be applied over wood, gypsum, or concrete decks, either with nails or with asphalt on flat decks. It should be kept dry at all times and no more insulation should be applied at one time than can be covered in that same day with roofing felts and asphalt.

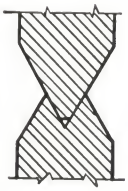
INTERIOR FINISH

Four types of Flintkote Insulation Board Products (Cane-ite) are available for use in finishing interiors: (1) Building Board, (2) Insulating Tile, (3) Insulating Plank, (4) Batten Strips.

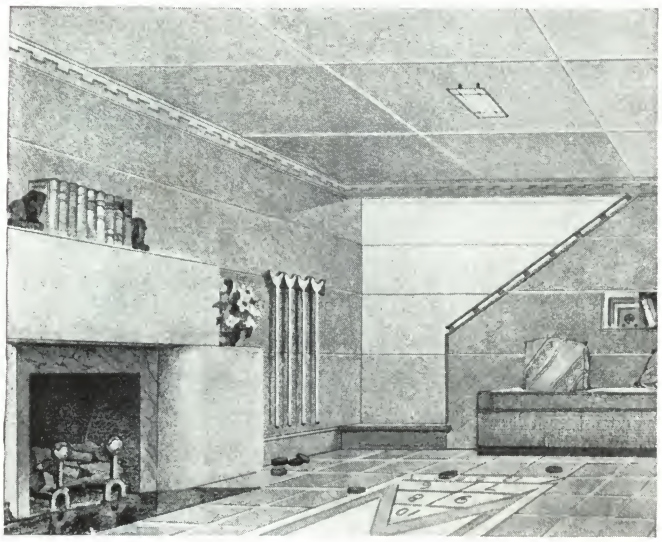
Building Board

Building Board is available with square edges in large sheets 4 ft. wide and in lengths from 6 to 12 ft. These may be easily applied for interior finish and are suitable for basements, attics, temporary buildings, stores, restaurants, etc. Joints may be covered with batten strips or beveled, providing a "V" cut to accent the joint. Patterns of almost any kind may be cut in the surface to give special decorative effects. The Stanley Fibre Board Cutter No. 193A is especially adapted for this purpose. Building Board may be applied to any surface or frame that will receive and hold nails. All joints, chair rails, mouldings, etc. must be backed by solid framing members. Building Board may be used in combination with tile or plank. See illustrations below.

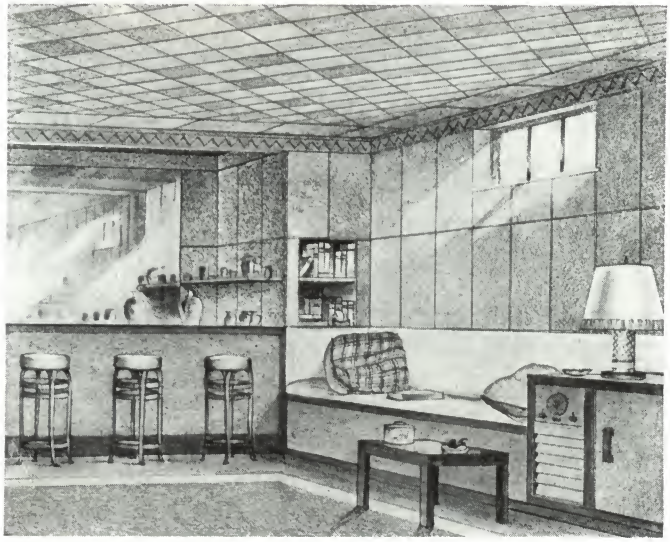
Insulating Tile



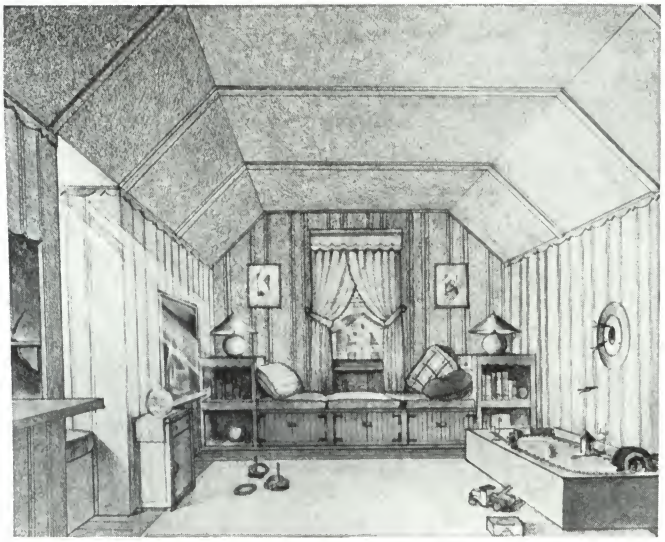
Tile are especially cut shapes of Insulation Board (square, or double square rectangles). They are provided with a reversible V-W joint to insure a clean, neat job. The cross section at the right shows the type of joint furnished on this product. The various square and rectangular shapes in different sizes may be applied to give a multiplicity of patterns, either rectangular or diagonal, such as basket weave, etc. Tile may be applied directly to any solid base either by means of nails or adhesives (where it is undesirable to show nails). The drawings below illustrate some of the uses of tile, plank, etc. For sizes see the table on the following page.



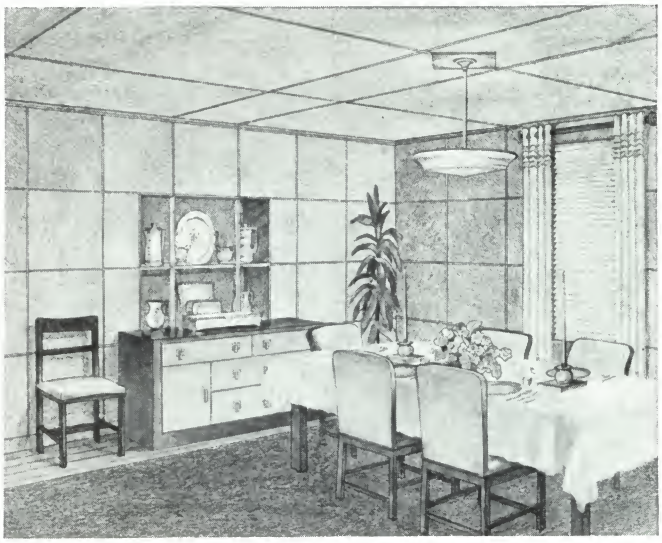
Above basement has been remodeled with Flintkote Building Board. Walls are finished with 4x8-ft. sheets scored with a "V" cut down the middle and applied horizontally. The ceiling is also covered with 4x8-ft. board grooved in 4-ft. squares.



Above shows a basement with walls covered with 12x24-in. Insulating Tile. On the ceiling 12x12-in. Tile are applied in a diagonal pattern with a border of 12x24-in. tiles. Ornamental treatment of the frieze is made from waste pieces.



In above room ceiling is decorated with 4 x 8-ft. Building Board and joints covered with Batten Strips. Insulating Plank in random widths covers sidewalls of this attic. Decorative trim is made from odd pieces left over from walls and ceilings.



Walls in the dining room above are finished with 24 x 24-in. Insulating Tile and the ceiling is finished with large size sheets of Building Board scored with a "V" cut to correspond and blend with the joints in the wall tile.

Insulating Plank

Insulating Plank is precut from Insulation Board in narrow widths from 6 to 16 in. and lengths from 8 to 12 ft. and may be used on walls or ceilings where the effect of lines close together in the design is desirable. Insulating Plank may be used in uniform or random widths and can be applied vertically or horizontally as desired, to any solid backing with nails or adhesives.

Batten Strips

Batten Strips are cut in 1¾ and 2½-in. widths from insulation board and are intended primarily to cover joints. They are also used for mouldings when desired. Batten Strips are applied over insulation board and must be nailed through to a solid framing base since insulation board cannot be used as a nailing base.

HardBoard

Flintkote HardBoard Products are dense wall boards made of compressed wood chips. They are suitable for use any place where large size sheets are required. Six standard grades are available: (1) Flintboard, (2) De Luxe Flintboard, (3) HardBoard, (4) Tempered HardBoard, (5) Black and Green Tempered HardBoard, (6) HardBoard Tile.

PRODUCT DATA—FLINTKOTE INSULATION BOARD*

Product	Sizes	Thickness	Color	Joint
Building Board	4 ft. wide 6, 7, 8, 9, 10, 12 ft. lengths	½, ¾, 1 in.	Natural finish Ivory finish in ½ in. thickness only	Square Edge
Asphalt Coated Sheathing Board	4 ft. wide 7, 8, 8½, 9, 9½, 10, 12 ft. lengths	$\frac{25}{32}$ in.	Asphalt Coated	Square Edge
Insulating Lath	18 in. x 48 in.	½ in., ¾ in.	Natural finish	Shiplap
Roof Insulation	22 in. x 47 in.	½ in., 1 in. 1½ in., 2 in.	Natural finish	Square edge in all sizes. Offset edge in 1-in. thickness only
Insulating Tile	12 in. x 12 in. 12 in. x 24 in. 24 in. x 24 in. 24 in. x 48 in. 16 in. x 16 in. 16 in. x 32 in. 18 in. x 48 in.	½ in. ½ in. ½ in. ½ in. ½ in. ½ in. ½ in.	Natural finish Ivory finish	Reversible V-W Joint (Bevel Shiplap Joint on Special Order)
Insulating Plank	6 in. x 8 ft., 10 ft., 12 ft. 8 in. x 8 ft., 10 ft., 12 ft. 10 in. x 8 ft., 10 ft., 12 ft. 12 in. x 8 ft., 10 ft., 12 ft. 16 in. x 8 ft., 10 ft., 12 ft.	½ in. ½ in. ½ in. ½ in. ½ in.	Natural finish Ivory finish	Reversible V-W Joint (Bevel Shiplap Joint on Special Order)
Batten Strip	1¾ in. x 8 ft., 10 ft. 2½ in. x 8 ft., 10 ft.	½ in. ½ in.	Natural finish Ivory finish	Bevel Edge

*Subject to change without notice.

HOMASOTE COMPANY

Manufacturers of Quality Products Since 1909

TRENTON, N. J.

Homasote *Thermasote* *Vehisote* *Pyrosote* *Homco* *Panelyzed Insulation*

HOMASOTE

Homasote is a weatherproof insulating board, combining great structural strength and resistance to air infiltration, with definite sound-deadening qualities. In the absolute sense—it is an integrated material. While not fireproof, it does not readily carry a flame. Homasote is exceptionally

Weatherproof
HOMASOTE
Insulating and Building Board

strong and durable, because it contains 33% to 56% more material than the general run of building boards; yet it is flexible enough to permit considerable curvature without breaking. Made in a variety of sizes—from 4 x 4 ft. up to 8 x 14 ft.—Homasote is readily adaptable to both exterior and interior wall surfaces. The average wall can be covered with a single piece —thereby avoiding the usual batten strips and unsightly wall joints. This provides a one-piece, *crack-proof* wall, overcoming all the problems of plaster.

The smooth linen finish makes a perfect surface for paper or for finishing with any type of paint. Paper may later be replaced without damage to the board.

The structural and insulating qualities of Homasote have all been attested by independent laboratories. Full details of these tests will be supplied on request.

The average physical characteristics are:	
Thickness, inches	.470
Density, lbs. per cu. ft.	25.6
Wt. per sq. ft., lbs.	1.07
Tensile strength, lbs. per sq. in.	630
Transverse strength (modulus of rupture, lbs. per sq. in.)	885
Modulus of elasticity, lbs. per sq. in.	25,800
Compressive strength, lbs. per sq. in.	19,500
Plaster adhesion, lbs. per sq. ft.	2,085
Thermal conductivity, B.t.u. per sq. ft. per 1°F. per hour	.42
Air infiltration in cu. ft. per sq. ft. per hour:	
Wind velocity 20 miles	0.1
40 miles	0.5
60 miles	1.9
80 miles	4.3
100 miles	7.75
Sound absorption for pitch 512	0.23
Water absorption: (20 hours) %	19

PANELYZED INSULATION

Panelyzed Insulation combines all the structural and insulating qualities of Homasote, with the beauty of natural wood grains. The panels are cast in moulds made from actual wood, each model having been selected for its particular beauty and interest. Knots, kerf marks and the entire grain are faithfully reproduced. Rooms may be beautifully paneled and insulated at the same time. As vertical siding on the exterior, it provides not only the exterior covering for the building, but also the insulation. Panelyzed Insulation is economical to use. It comes in 16, 32 and 48-in. widths to fit the studding and eliminate blocking. Combined with Homasote's weatherproof properties, it is probably the cheapest form of exterior treatment for houses.

PANELYZED INSULATION

In colors, there is the choice of Pine-Tone, Silver Gray, Old English Light and Old English Dark — or a natural finish which can be stained to approximate almost any tone desired. By employing the three different widths and upending alternate panels, repeats need never occur. Panelyzed Insulation is applied to the studs with Sote Glue and 4d finishing nails —may also be applied over old plaster.

Panelyzed Insulation is packed in two assortments of sizes. Package No. 1 contains 2 panels 48 in., 2 panels 32 in. and 2 panels 16 in. Package No. 2 contains 4 panels 32 in. and 4 panels 16 in. Lengths 8 ft. and 8 ft. 6 in. Be sure to specify lengths desired.

PRECISION-BUILT HOMES

30 days from your board to the finished house.

Here is the most revolutionary method of home construction yet devised; more house for the money; quality materials used throughout; built in 30 days or less; doubly insulated; one-piece, *permanently* crack-proof walls; eligible for FHA loans.

Under the Precision-Built method, any frame building—of any size or design—can be completely built and ready for occupancy in a minimum of time. The exterior finish may be our own Sand Finish (resembling stucco and more enduring) or brick veneer, stone veneer, patented sidings, clapboards or shingles.

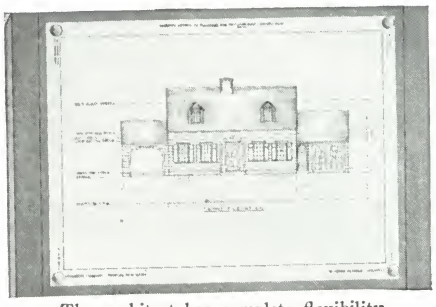
Precision-Built Homes are nationally advertised and merchandised on a plan which ties together in profitable co-operation — the architect, contractor, lumber dealer and realtor. More than $2,000,000 of architect-designed Precision-Built Homes have already been erected.

PRECISION-BUILT HOMES

The Precision-Built Home first begins to take shape in the lumber dealer's mill, or a shop adjacent to it. There the wall and partition sections are built complete on a jig; joists and rafters are cut to size —accurately cut in a shop where precision work is the invariable rule. Every joint in the house will be a tight, sturdy joint, because it was cut by an accurate machine. The framing lumber in the walls is protected from the weather and kept dry, thus preventing later shrinkage. Meantime, the excavation has been completed and the foundations built. Now all the materials and the completed wall sections move to the location. Because of the work done in the shop, the house is completely enclosed and ready for heat—the second day.

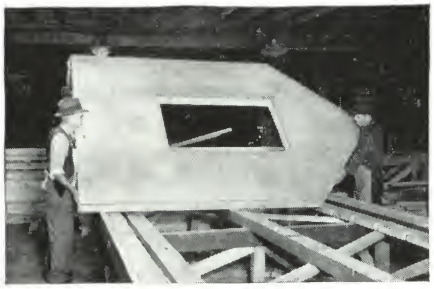
With our Simplified Method of Planning, the architect saves many hours in drafting, detailing and supervision. The entire system is incorporated on 20 compact, convenient cards; it includes the most advanced method ever devised of calculating rafters of every type.

We will be happy to send to any architect our Simplified Method of Planning and the full details of the Precision-Built Method of Construction — without charge. By our plan, the architect has business created for him. He handles even low cost homes *at a profit.*



The architect has complete flexibility in his design

Precision-Built construction starts in the shop—where all lumber is pre-cut



Wall and partition units are framed from working drawings, with doors and windows integral

Complete sections are delivered by truck to the location

In 2 hours all partitions are up; the job is ready for roofing with pre-cut rafters

THERMASOTE AND THERMASOTE SHEATHING

Thermasote has long been known as the ideal 1-in. insulation board. Completely weatherproof, with maximum resistance to air infiltration — it may be used on either interior or exterior wall surfaces. It may be left untreated; stained or painted; or finished with our own special

THERMASOTE

.... for double insulation

THERMASOTE ..SHEATHING

Sand Finish. It is stocked in sizes from 4 x 4 to 4 x 14 ft.; furnished on special order in sizes from 6 x 8 to 8 x 14 ft. Thicknesses—¾, 1, 1½, 2, 2½, 3, 3½ and 4 in.

Thermasote 25/32-in. Sheathing is supplied in sheets up to 8 x 8 ft. and in larger sheets on special order. It provides maximum insulation and resistance to air infiltration. It is absolutely weatherproof, backed by 20 years' exposure—no need for asphalt coatings. It is stronger than diagonal wood sheathing or other insulations.

OTHER SOTE PRODUCTS

Pyrosote—An asbestos-cement board for structural, insulating or acid-proofing purposes. Made with 80% asbestos, it will withstand very high temperatures and does not shatter; can be worked with ordinary wood tools, die-cut, screwed or nailed through without prepunching. Supplied in two forms—light and porous or heavy and solid—and in thicknesses from ⅛ to 1 in.

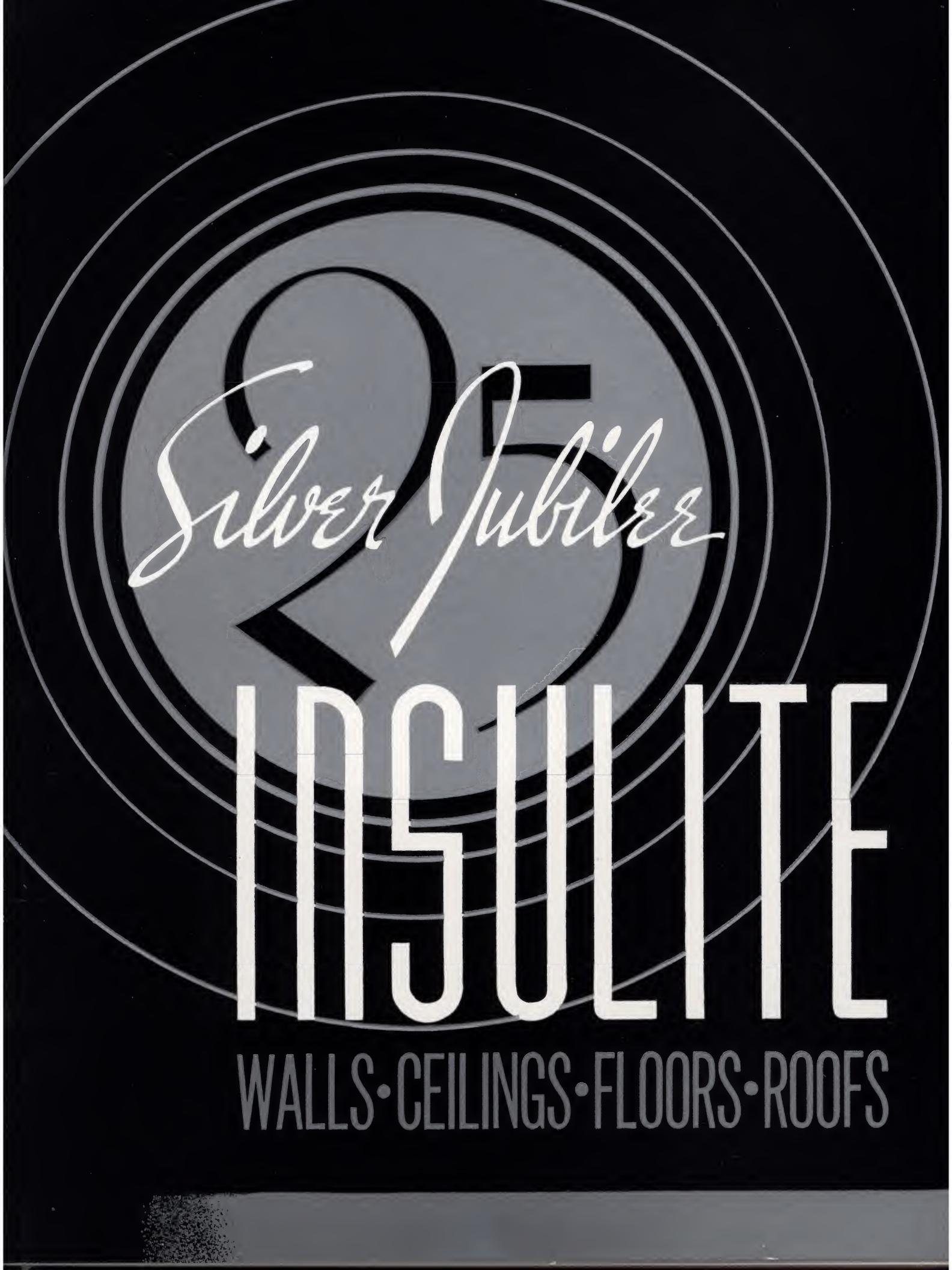
Vehisote—A dense, rigid board that can be tooled or bent to moderate curvatures. Unsurpassed for all types of interior paneling, mural decorations, etc.

Sand Finish — Presents a beautiful stucco-like appearance for either interior or exterior surfaces. Will not crack, check or peel off. Has been used on exterior for 20 years without need for redecorating. Any color may be had. Applied with a brush.

Descriptive Booklets

Special folders and booklets describing each of the Homasote products—showing uses, application instructions and prices—will be sent free on request.

MEMORANDA


Silver Jubilee
25
INSULITE
WALLS · CEILINGS · FLOORS · ROOFS

THE INSULITE COMPANY

GENERAL OFFICES: 1100 Builders Exchange, Minneapolis, Minnesota

SALES SOLICITORS OFFICES:

NEW YORK, N. Y., 101 Park Avenue
SAN FRANCISCO, CALIF., 475 Brannan St.
CHICAGO, ILL., 205 W. Wacker Drive
ST. LOUIS, MO., 1206 South Vandeventer

MILLS: International Falls, Minnesota and Karhula, Finland

THE COMPANY • EXPERIENCE AND FACILITIES

EXPERIENCE

As the pioneer in the manufacture of structural wood fiber insulating materials, The Insulite Company is the first to announce its Silver Anniversary. During these 25 years, continuous laboratory research work and actual experience enabled The Insulite Company to develop modern materials to meet the demands of the consumer in modern building.

MANUFACTURING FACILITIES

A thoroughly modern plant capable of producing 300,000,000 sq. ft. per year assures an ample supply of material at all times. Special machines permit the economical fabrication of special insulation items required in the industrial field.

DISTRIBUTION

Insulite Products are distributed nationally through retail lumber dealers. To facilitate shipping and handling without injury, these materials are securely packaged in strong, easily handled bundles for safe delivery to the job.

SERVICE

THE INSULITE CO. maintains at its various offices a Service Department personneled with experienced Insulation Engineers. The Company tenders its full cooperation and service facilities to architects in the solution of insulation problems.

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INSULITE MANUFACTURING PROCESS

The manufacture of Insulite Insulating Building Materials begins in the vast northern woods. Carefully selected wood is transported to the Insulite Mill where it is cut into shorter lengths and the bark removed. The logs are then reduced to fibers by the cold grinding process which leaves the fibers clean, durable and in their natural light color. The fibers also retain the inherent protective gums and the original characteristics of the wood which are so essential in obtaining the exceptionally high quality of finished Insulite Building Materials. The fibers are thoroughly treated to insure the greatest possible degree of moisture resistance and are formed into large sheets by a felting process which was especially developed to provide uniform quality and strength throughout to the finished material. During the felting process the fibers are interlaced in such a manner as to produce a myriad of minute air cells affording the maximum amount of resistance to heat passage.

NOTE: Insulite Insulating Building Materials are protected by a patented process against attack by termites, rot, and fungi. This treatment is colorless and does not contain anything injurious to animal or human life.

PHYSICAL CHARACTERISTICS

BASIC MATERIALS—Two distinct types of Insulite Insulating Building Materials are manufactured, and are available in many forms. These basic materials are:

1. "INSULITE INS-LITE"— which is light cream in color.
2. "INSULITE GRAYLITE"—an asphalt-containing board having a neutral gray-brown color.

Both are furnished with two surface textures.

The "BURLAP TEXTURE"—simulates a loosely woven fabric.

The "LINEN TEXTURE" is smooth and simulates a closely woven fabric.

TESTS—All test data, the results of which only are here given, are substantiated by complete reports from competent laboratory sources. It will be noted that all Insulite Insulating Building Materials conform with the requirements set forth in Federal Specifications governing fiber insulating boards.

THERMAL CONDUCTIVITY—The conductivity of Insulite Insulating Building Materials of standard density is .33 B.t.u. per sq. ft., per inch thickness, per hour, per degree F. (U. S. Bureau of Standards' test on 16.9 lb. density Insulite material).

The average conductivity of Insulite Cold Storage Insulation Materials is .30 B.t.u. per sq. ft., per inch thickness, per hour, per degree F.

TENSILE STRENGTH—The average tensile strength of INS-LITE is 325 lbs. per sq. in. The average tensile strength of GRAYLITE is 375 lbs. per sq. in.

TRANSVERSE STRENGTH—In this test specimens of ½-in. INS-LITE and GRAYLITE, 3 in. wide, are placed on supports 12 in. o. c. A load is placed at mid-point and increased until failure. Under these conditions the average load for INS-LITE is 19 lbs., and for GRAYLITE, 25 lbs.

STRUCTURAL STRENGTH—Tests on wall sections sheathed with Bildrite Sheathing (applied with the long edges parallel to the framing members and according to specifications contained herein) show that it is comparable in bracing strength to the best grades of wood sheathing applied diagonally and four times stronger than wood sheathing horizontally applied.

MOISTURE RESISTANCE — All Insulite insulating Building Materials are treated during manufacture so as to have a high quality of moisture resistance. Specimens of INS-LITE and GRAYLITE ½ in. thick x 12 in. square when completely immersed in running water at a temperature of 70 degrees F. for two hours show a total absorption by volume of less than 5 percent.

PLASTER BOND—Laboratory tests show that a direct perpendicular pull of 1,152 lbs. per sq. ft. is required to rupture the bond between gypsum plaster and Lok-Joint Lath.

RESILIENCE—According to tests conducted by Prof. F. B. Rowley of the University of Minnesota, ½ in. INS-LITE will compress only an average of .214 in. under a load of 72,000 lbs. per sq. ft. After release of the load, the test samples will return to within .0625 or 1/16 in. of its original thickness.

SOUND ABSORPTION—Insulite materials are efficient in sound quieting and acoustical correction. At a frequency of 512 cycles per second, ½ in. thickness INS-LITE has a coefficient of sound absorption of 0.30, and ½ in. GRAYLITE of 0.25. The noise reduction coefficient (average coefficients for frequencies of 256 to 2,048 cycles inclusive) is 0.30 for both of these materials.

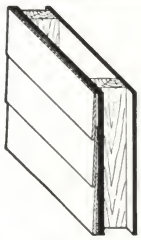
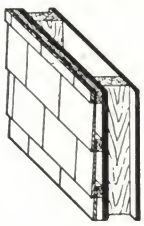
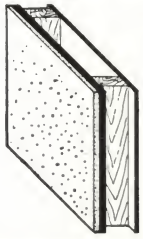
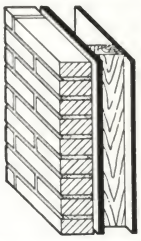
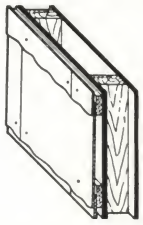
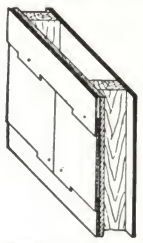
Frequencies	128	256	512	1024	2048	N.R.
INS-LITE	.33	.39	.30	.27	.24	.30
GRAYLITE	.32	.34	.25	.23	.30	.30

FIRE RESISTANCE—Insulite Insulating Building Materials are slow burning. Since there are no open joints in the standard methods of application to permit inflow of air, these materials form a barrier against fire travel.

UNIFORMITY—Adequate laboratory control and mill inspection assure uniformity in the physical characteristics and appearance of the various Insulite Building Materials. Packing methods eliminate damage under normal shipping conditions.

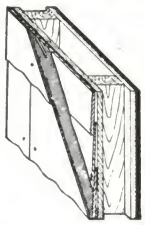
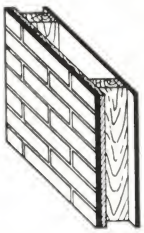
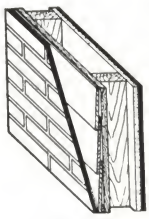
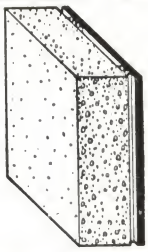
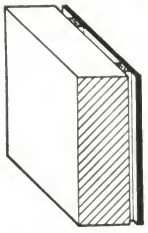
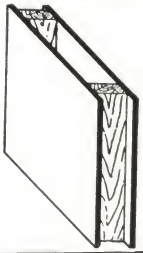
THE INSULITE WALL OF PROTECTION

Note: *The following wall sections illustrate constructions using Insulite materials. Various materials for use in the intermediate spaces and interior surfaces may be selected from those listed.*

WALL	EXTERIOR MATERIALS	INTERMEDIATE WALL SPACES	INTERIOR MATERIALS
	Bildrite Sheathing Wood Siding	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Bildrite Sheathing Wood Shingles	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Bildrite Sheathing Stucco on Metal Lath	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Bildrite Sheathing Brick Veneer	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Bildrite Sheathing Asbestos Siding Shingles	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Wood Sheathing Asbestos Siding Shingles	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")

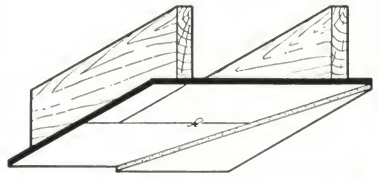
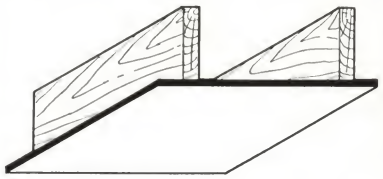
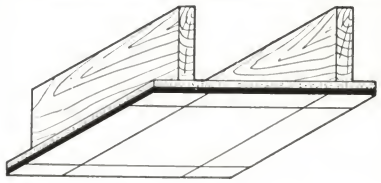
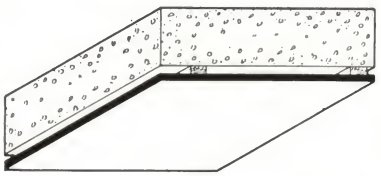
THE INSULITE WALL OF PROTECTION

Note: *The following wall sections illustrate constructions using Insulite materials. Various materials for use in the intermediate spaces and interior surfaces may be selected from those listed.*

WALL	EXTERIOR WALL SURFACES	INTERMEDIATE WALL SPACES	INTERIOR WALL SURFACES
	Asbestos Siding Shingles over Zephyrlite or Insulite Waterproofed Paper in Remodeling	Fiberock Granulated Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Briklite Siding over Wood Sheathing	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Briklite Siding over Wood Siding in Remodeling	Fiberock Granulated Fill	Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Monolithic Concrete		Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	Solid Brick or Tile		Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")
	(Partition)		Lok-Joint Lath (½") (¾") (1") Ins-Lite (½") (¾") Graylite (½") (¾") Smoothcote (½") Satincote (½") Bronzelite (¼") Hard Bronzelite (1/10") to (5/16") Tempered Bronzelite (1/10") to (5/16")

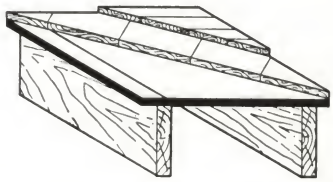
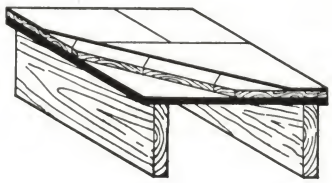
INSULITE CEILINGS

Note: *The following ceiling sections illustrate constructions using Insulite materials. Various materials for use in the intermediate spaces and interior surfaces may be selected from those listed.*

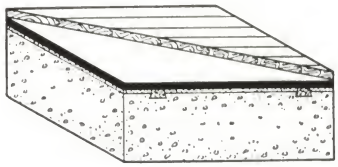
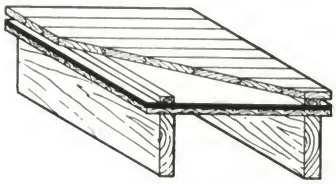
CEILINGS	INTERMEDIATE SPACES	INTERIOR SURFACES
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Lok-Joint Lath (½") (¾") (1") and Plaster
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Graylite (½") (¾") Ins-Lite (½") (¾") Smoothcote (½") Satincote (½") Acoustilite (¾") (1½") Bronzelite (¼") Bronzelite Designed Ceiling
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	(Over plaster in remodeling) Graylite (½") (¾") Ins-Lite (½") (¾") Smoothcote (½") Satincote (½") Acoustilite (¾") (1½") Bronzelite (¼") Bronzelite Designed Ceiling
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Graylite (½") (¾") Ins-Lite (½") (¾") Smoothcote (½") Staincote (½") Acoustilite (¾") (1½") Bronzelite (¼") Bronzelite Designed Ceiling

INSULITE FLOORS

Note: *The following floor sections illustrate constructions using Insulite materials. Various materials for use in the intermediate spaces and interior surfaces may be selected from those listed.*

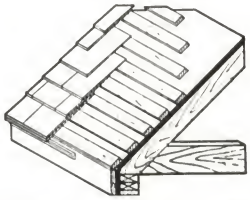
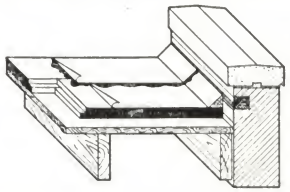
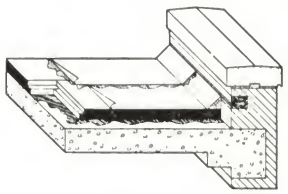
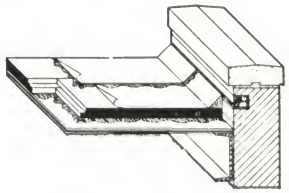
FLOORS	INTERMEDIATE SPACES	SUB-FLOOR OR SURFACE
	Fiberock Batts Fiberock Jr. Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Ins-Lite or Graylite for Sub-Floor
	Fiberock Batts Fiberock Jr. Batts Fiberock Pads Fiberock Loose Fill Fiberock Granulated Fill Fiberock Pre-Packed Fill	Tempered Bronzelite Flooring

INSULITE FLOORS (Cont'd)

FLOORS	INTERMEDIATE SPACES	SUB-FLOOR OR SURFACE
	Insulite Waterproofed Paper	Ins-Lite or Graylite for Sub-Floor
	Insulite Waterproofed Paper	Ins-Lite or Graylite for Sub-Floor

INSULITE ROOFS

Note: *The following roof sections illustrate constructions using Insulite materials. Various materials for use in the intermediate spaces and interior surfaces may be selected from those listed.*

ROOFS	INTERMEDIATE SPACES	EXTERIOR
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads	Bildrite Sheathing and Shingles
	Fiberock Batts Fiberock Jr. Batts Fiberock Wall-Seal Batts Fiberock Jr. Wall-Seal Batts Fiberock Pads	Ins-Lite and Graylite Roof Insulation
		Ins-Lite and Graylite Roof Insulation
		Ins-Lite and Graylite Roof Insulation

INSULITE WALL MATERIALS • EXTERIOR

BILDRITE SHEATHING

Description: Square edge wood fiber structural insulating sheathing boards of special composition with increased density, furnished in the thickness usually employed for sheathing purposes—$^{25}/_{32}$ in.

Bildrite Sheathing is an asphalt-containing board manufactured under an exclusive process. It has a distinctive gray-brown color, increased strength and added resistance to moisture.

Use: Efficient structural sheathing boards.

Sizes (area): 4 ft. wide x 8, 8½, 9, 9½, 10 and 12 ft. long.

Thickness and Surface Finishes: $^{25}/_{32}$ in. homogeneous composition. Burlap texture one surface and Linen texture on other surface. Each sheet marked on Linen surface to indicate proper nail spacing.

ASBESTOS SIDING SHINGLES

Description: Asbestos Siding Shingles consist of pure asbestos fibers and Portland cement formed into various shapes and sizes of siding units, under pressure, and are non-combustible.

There are four styles of units: Wavy Butt, Thatched Butt, Straight Edge, and Clapboard. Each style has impressed in its exposed surface a texture similar to the graining in cypress wood. The clapboard is also available with a plain surface without this texture.

Each style is available in a pearl gray (either untreated or waterproofed) and in a solid white color which is integral. All white units are waterproofed. Units come ready punched for nailing.

Uses: Exterior finish for either new or old construction.

Sizes (area): Wavy Butt 12 in. x 24 in.; 9½ in. x 22 in.
Thatched Butt.....12 in. x 24 in.
Straight Edge.....8½ in. x 22 in.
Clapboard.....9½ in. x 48 in.

Thicknesses and Fabrication: All units $^{5}/_{32}$ in. thick. Wavy Butt Shingles cut straight and square edged on top and 2 ends. Bottom side cut to a wavy line. Thatched Shingles are straight and square edged top and 2 ends with bottom also square edged but presents broken line. Straight Edge and Clapboard shingles are cut straight and square edged on 4 sides.

BRIKLITE SIDING

Description: Insulating Siding in brick pattern involving three units, namely: Stretcher Course for main wall area, Block Course for starting unit, Overlapping Corner unit for exterior corners. Briklite Siding Units are composed of ½ in. Graylite enveloped with asphalt. The faces of the units are then covered with a high melt point asphalt mixed with pulverized mineral over which is applied a covering of mineral granules. Surface is then embossed to resemble brick. Units are available in either red or buff color. Necessary adjunct in application of Briklite Siding is Briklite Mastic for sealing joints and caulking nail heads.

Uses: Exterior finish for all types of buildings either old or new.

Sizes (area): Stretcher Course 43$^{5}/_{8}$ in. x 14$^{3}/_{8}$ in.
Block Course 33 $^{13}/_{16}$ in. x 9$^{1}/_{8}$ in.
Overlapping Corner Unit 33$^{13}/_{16}$ in. x 8¼ in.

Thickness and Fabrication: All units $^{5}/_{8}$ in. thick. Stretcher Course shiplapped 4 edges. Block Course shiplapped one long edge and 2 ends. Overlapping Corner Unit shiplapped 2 ends.

INSULITE FLOOR, WALL, CEILING, AND ROOF MATERIALS • INTERMEDIATE

INSULITE FIBEROCK

Description: A quality mineral wool blown from natural rock, treated during manufacture to increase resistance to moisture absorption. Clean, inorganic, incombustible, permanent, insect and vermin proof, efficient insulation.

Uses: For insulating the intermediate part of wall and ceiling structures.

FIBEROCK BATTS—Fabricated in units 3$^{5}/_{8}$ in. thick and size 15 in. x 23 in.

FIBEROCK JUNIOR BATTS—Fabricated in units 2 in. thick and size 15 in. x 23 in.

FIBEROCK WALL-SEAL BATTS—Fabricated in wall thick units sizes 15 in. x 23 in. and 15 in. x 48 in. Lined on one side with waterproofed, asphalt-saturated kraft paper, with flanges on all four edges of the unit.

FIBEROCK JUNIOR WALL-SEAL BATTS—Fabricated in units 2 in. thick and sizes 15 in. x 23 in. and 15 in. x 48 in. Lined one side with waterproofed asphalt-saturated kraft paper—flanged all four sides.

FIBEROCK PADS—Available in wall-thick units sizes 15 in. x 9 in. without paper backing.

FIBEROCK LOOSE FILL—Fabricated in bulk form and available in 35 lb. bags.

FIBEROCK GRANULATED FILL—Fabricated in bulk form and available in 35 lb. bags.

FIBEROCK PRE-PACKED FILL—Fabricated in the form of a batt, but not so self-supporting. Available in units 15 in. x 9 in. and roughly 2 in. thick, as packed in 35 lb. bags.

INSULITE WALL MATERIALS • INTERIOR

INSULATING

Description: Wood fiber boards of standard composition and density.

Uses: Interior wall finish.

INS-LITE: Natural surface board with the light color of natural wood—burlap texture one surface—linen texture other surface. Following sizes available in ½ and ¾ in. thicknesses—B-B joint long edges, 4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long, also square edged only 6 x 8 ft., 6 x 12 ft., 8 x 8 ft. and 8 x 12 ft. Also with V-W joint on four edges in ½ and ¾ in. thicknesses and in size 16 x 32 in.

GRAYLITE: Asphalt-containing board with natural surface and neutral gray-brown color. Burlap texture one surface—linen texture other surface. Furnished in same thicknesses and sizes as Ins-Lite and 12 x 12 in. V-W joint four edges.

SATINCOTE: A finished surface wall board with a rich light color, factory sealed and primed. The surface is smooth, hard and durable and offers great resistance to abrasion. The sealed surface requires no further decorative treatment but, if desired, it may be painted with a maximum coverage. Following sizes available in ½ in. thickness—square edged or beveled long edges of finished side—4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long. Following sizes available in ½ in. thickness with V-W joint beaded on long edges—widths 6, 8, 10, 12 and 16 in.; lengths, 8, 9, 10 and 12 ft. Following sizes available in ½ in. thickness, V-W joint on four edges—12 x 12 in., 12 x 24 in., 16 x 16 in., 24 x 24 in., and 16 x 32 in.

SMOOTHCOTE: A pre-finished wall board with a smooth, hard surface in a pleasing light cream color which affords high light reflection. No decorative treatment is required over the surface; however, if desired, the board may be easily painted. Furnished in same thicknesses and sizes as Satincote, except no sizes with V-W joint, beaded on long edges.

ZEPHYRLITE: Asphalt-containing board with a natural surface of neutral gray-brown color. Burlap texture one surface—linen texture other surface. Available in ¼ in. thickness only—square edged. Sizes 4 ft. wide x 6, 7, 8, 9, 10 and 12 ft. long.

LOK-JOINT LATH

Description: Fabricated from Ins-Lite board. Long edges shiplapped to retard air infiltration and maintain continuity of insulation. Galvanized wire "loks" spaced midway between framing supports 16 in. o. c. on bottom edges of each unit (an exclusive Insulite feature) which reinforce the unsupported horizontal joint and minimize yielding under trowel pressure during the plastering operation. These "loks" also serve as plaster grounds assuring not less than ¼ in. thickness of plaster on first coat.

Use: Interior wall plaster base.

Size: 18 x 48 in.

Thicknesses and Surface Finish: ½, ¾ and 1 in. thick. ½ and ¾ in. thicknesses are homogeneous. 1 in. thickness is laminated (two ½ in. thicknesses stapled). Burlap textured surface.

NON-INSULATING

Description: Wood fibers formed by hydraulic pressure into strong, rigid, grainless boards possessing a smooth, hard surface.

Use: Interior wall finish.

BRONZELITE: 37½ lb. per cu. ft. density board—Golden Oak brown color. Available ¼ in. thick in sizes 4 ft. wide x 2, 3, 4, 5, 6, 7, 8, 9, 10 and 12 ft. long.

DELUXE BRONZELITE: 55½ lb. per cu. ft. density board—Golden Oak brown color. Available ¼ in. thick in sizes 4 ft. wide x 2, 3, 4, 5, 6, 7, 8, 9, 10 and 12 ft. long.

HARD BRONZELITE: 63 lb. per cu. ft. density board—Golden Oak brown color. Available ⅛ and 3/16 in. thicknesses in sizes 4 ft. wide x 2, 3, 4, 5, 6, 7, 8, 9, 10, and 12 ft. long.

TEMPERED BRONZELITE: 68 lb. per cu. ft. density board—Burl Walnut brown color. Available ⅛ and 3/16 in. thicknesses in sizes 4 ft. wide x 2, 3, 4, 5, 6, 7, 8, 9, 10, and 12 ft. long.

TEMPERED BRONZELITE TILE BOARD: 68 lb. per cu. ft. density board, scored in 4 in. squares—Burl Walnut brown color. Available ⅛ and 3/16 in. thicknesses in size 4 ft. x 12 ft.

EBONITE: 68 lb. per cu. ft. density board—Slate Black color. Available ⅛ and 3/16 in. thicknesses in 4 ft. x 12 ft.

GREENLITE: 68 lb. per cu. ft. density board—Green color. Available ⅛ and 3/16 in. thicknesses in size 4 ft. x 12 ft.

BATTEN STRIPS (Ins-Lite, Graylite, Smoothcote and Satincote)

Description: Fabricated from Ins-Lite, Graylite, Smoothcote or Satincote board. Available in various widths and lengths with either one or two long edges beveled.

Uses: Joint treatment on walls.

Sizes (area): 2 in., 3 in., and 4 in. widths
8 ft., 10 ft., and 12 ft. lengths

INSULITE WALL MATERIALS • INTERIOR (Cont'd)

INS-LITE COLD STORAGE INSULATION

Description: Fabricated from special low density wood fiber board—approximately 12 lbs./cu. ft. All units are square edged. Average thermal conductivity is .30 B.t.u. per inch thick.

Use: For insulating walls of ice manufacturing plants, cold storage plants, cooler rooms.

Sizes (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 in. x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 in.

SEALDSLAB COLD STORAGE INSULATION

Description: Fabricated from the same low density material as Ins-Lite Cold Storage Insulation; however, the board is given an additional treatment consisting of a continuous impregnation of especially prepared asphalt to a uniform depth of 3/32 in. on all faces and edges which, with the addition of the final asphalt coating applied on the job, provides a superior seal against moisture and vapor. All units are square edged.

Uses: For insulating walls of freezers; meat, beer, and creamery coolers; milk cooling tanks; fruit and vegetable storage rooms.

Sizes (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 24 in. wide x 18 in. long; 24 in. x 24 in., 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 in.

INSULITE SEALER

Description: An emulsified oil base primer especially prepared for sealing the surface of Insulite products. Although developed primarily for wood fiber, rigid board insulation, it can be used as a primer and sealer on other porous surfaces. Available in 1 qt. and 1 gal. cans and 5 gal. pails.

Use: Sealer and primer for wall materials.

INSULITE CEILING MATERIALS

INSULATING (Ins-Lite, Graylite, Smoothcote and Satincote)

Description: Fabricated from Ins-Lite, Graylite, Smoothcote, or Satincote. Available in either small sizes or large sizes.

Use: Interior Ceiling finish.

Sizes and Thicknesses: For this information see Insulite Wall Materials—Interior—Insulating, page 9.

LOK-JOINT LATH

Description: Wood fiber insulating plaster base for ceilings. Fabrication same as Lok-Joint Lath for walls (see page 9).

Use: Interior ceiling plaster base.

Size (area): 18 x 48 in.

Thicknesses and Surface Finish: ½, ¾, and 1 in. thicknesses. ½ and ¾ in. are homogeneous composition. 1 in. thickness is laminated (two ½ in. thicknesses stapled). Burlap finish—a surface to which plaster will adhere.

NON-INSULATING

BRONZELITE DESIGNED CEILINGS

Description: A non-insulating ceiling material fabricated from Bronzelite, available in four sizes, either plain or grooved, in various designs. There are 16 basic units which, when used in combination, will provide numerous patterns. All units are beveled all four edges.

Use: Interior ceiling finish.

Sizes (area): 2 x 2 ft., 2 x 4 ft., 3 x 4 ft., and 4 x 4 ft.

Thickness: Available in ¼ in. thickness only.

BRONZELITE MATERIALS

Use: Interior ceiling finish.

For descriptions, thicknesses, and sizes of the various types of Bronzelite materials, see page 9.

ACOUSTILITE

Description: An efficient acoustical material of low density, available in two colors, either buff or white, and with a surface texture resembling Travertine stone. Coefficients of sound absorption at 512 d.v. are 0.69 and 0.81 respectively for ¾ in. and 1½ in. thicknesses. Coefficients of noise reduction are 0.55 and 0.70 respectively for ¾ in. and 1½ in. thicknesses.

Use: For interior ceiling finish where acoustical correction and sound control are desired.

Sizes (area): 6 x 12 in., 12 x 12 in., 8 x 16 in., 16 x 16 in.; and in 1½ in. thickness only 12 x 24 in. and 24 x 24 in.

Thicknesses: ¾ and 1½ in.

INS-LITE COLD STORAGE INSULATION

Description: Special low density wood fiber board, fabricated same as Ins-Lite Cold Storage Insulation for walls (see above).

Use: For insulating ceilings of ice manufacturing plants, cold storage plants, cooler rooms

Sizes (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 inches.

SEALDSLAB COLD STORAGE INSULATION

Description: Fabricated from special low density wood fiber board, same as Sealdslab Cold Storage Insulation described under Insulite Wall Materials—Interior (see page 10).

Use: For insulating ceilings of fruit and vegetable storage rooms, general cold storage rooms.

Sizes (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 inches.

INSULITE SEALER

Description: (See Insulite Wall Materials—page 10.)

Use: Sealer and primer for Insulite ceiling materials.

INSULITE FLOOR MATERIALS

INS-LITE OR GRAYLITE

Description: B-B joint on long edges, wood fiber insulating boards of standard composition and density.

Use: Insulating sub-flooring.

INS-LITE: Natural surface board the color of clean natural wood—burlap texture one surface—linen texture the other surface. Available in ½, ¾ or 1 in. and in sizes 4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long.

GRAYLITE: Asphalt-containing board—neutral grey brown color—burlap texture one surface—linen texture other surface. Available in ½, ¾ or 1 in. and in sizes 4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long.

ZEPHYRLITE: Asphalt-containing board—neutral gray-brown color—burlap texture one surface—linen texture other surface. Available in ¼ inch thickness only and in sizes of 4 ft. wide x 6, 7, 8, 9, 10 and 12 ft. long.

Use: Finished floor material.

Sizes (area): 11¾ x 23½ in. and 23½ x 47 in.

Thickness: 3/16 in. thickness only.

INS-LITE COLD STORAGE INSULATION

Description: Special low density wood fiber board (see Ins-Lite Cold Storage Insulation under Insulite Wall Materials—Interior—page 10).

Use: For insulating floors of ice manufacturing plants, cold storage plants, cooler rooms.

Sizes (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 inches.

SEALDSLAB COLD STORAGE INSULATION

Description: Fabricated from special low density wood fiber board the same as Sealdslab Cold Storage Insulation described under Insulite Wall Materials—Interior (see page 10).

Use: For insulating floors of fruit and vegetable storage rooms, general cold storage rooms.

Sizes: (area): 6, 9, 12, 18, 24 in. wide x 36 in. long; 12, 18, 24 in. wide x 18 in. long; 24 x 24 in.; 12, 24 in. wide x 48 in. long.

Thicknesses: 1, 1½, 2, 3 and 4 in.

TEMPERED BRONZELITE FLOORING (Non-Insulating)

Description: Extra heavy density board of uniform thickness and with a smooth hard surface—burl walnut brown color.

INSULITE ROOF MATERIALS

BILDRITE SHEATHING

Description: (See Bildrite Sheathing under Wall Materials—Exterior, page 8.)

Use: Roof boarding.

Sizes (area): 4 ft. wide x 8, 8½, 9, 9½, 10 and 12 ft. long.

Thickness: 25/32 in.

ROOF INSULATION (INS-LITE and GRAYLITE)

Description: Ins-Lite Roof Insulation is fabricated from wood fiber boards of standard composition and density—the color of clean natural wood.

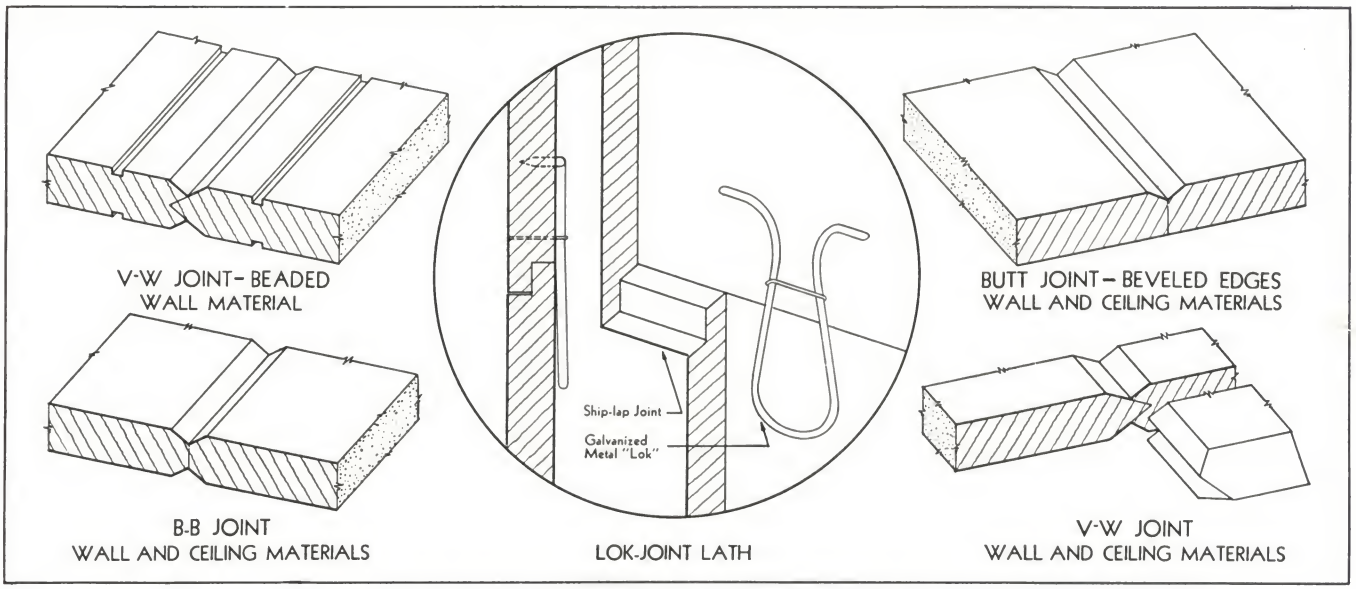
Graylite Roof Insulation is an asphalt-containing board of a neutral gray-brown color. The asphalt treatment not only provides added strength and added moisture resistance to the roof insulation but also a better natural bond with the bitumen used on the job.

Use: Insulation over various types of roof decks under built-up finished roofing.

Size (area): 22 x 47 inches.

Thicknesses and Fabrication: Ins-Lite and Graylite Roof Insulation are available in the same thicknesses and with the same fabrication. They may be integral or laminated in multiple layers by stapling or cementing. Stapled roof insulation is also strip cemented. The edges may be either square or offset 1 in. on all four edges. Cemented Roof Insulation is solidly cemented with a highly water-resistant adhesive and the edges may be either square or offset ½ in.

Thickness	Fabrication	Edges
½ in.	Integral	Square
1 in.	Integral	Square or offset ½ in.
1½ in.	Cemented	Square or offset ½ in.
	Stapled	Square or offset 1 in.
2 in.	Cemented	Square or offset ½ in.
	Stapled	Square or offset 1 in.



INSULITE WATERPROOFED PAPERS

The Insulite line of waterproofed papers consists of a variety of types and qualities of both plain and reinforced styles. Both are available either with or without surface treatments of a specially prepared asphalt.

Insulite papers are reinforced with a strong jute yarn imbedded in the asphalt which combines the two kraft sheets into the final product. This yarn forms either a square or diamond mesh pattern.

The untreated papers are made by combining two sheets of heavy kraft paper together with a liberal quantity of odorless asphalt. The treated papers have had both sides of each kraft liner treated with a specially prepared asphalt before they are formed into the final product. This process provides five layers of asphalt, each one resistant to the passage of moisture and vapor and to the attack of rot and fungi.

Uses: Under shingles and sidings in both new and remodeling work, under finished roofing, over subfloors, basement ceilings, lining garages and farm build ings, over sheathings in both new and remodeling work, protecting concrete and terrazzo work.

Sizes: Available in the following widths and areas:

36 in. wide— 250 sq. ft. per roll
36 in. wide— 500 sq. ft. per roll
36 in. wide— 900 sq. ft. per roll
40 in. wide—1000 sq. ft. per roll
48 in. wide—1200 sq. ft. per roll
54 in. wide—1350 sq. ft. per roll
60 in. wide—1500 sq. ft. per roll
72 in. wide—1800 sq. ft. per roll

Insulite papers also available in a 48 in. width and 666 sq. ft. area per roll.

Description of the individual styles of Insulite Waterproofed Papers (weights are per 1,000 sq. ft.):

PAPER No. 1—Two (2) sheets of No. 1 kraft combined together with asphalt and reinforced with ½ in. mesh jute yarn. Weight—60 lbs.

PAPER No. 1, Vapor-Proofed—Similar to No. 1, except that both sides of each kraft liner are treated with a specially prepared asphalt. Weight—70 lbs.

PAPER No. 2—Two (2) sheets of No. 1 kraft combined together with asphalt and reinforced with 1 in. mesh jute yarn. Weight—56 lbs.

PAPER No. 2, Vapor-Proofed—Similar to No. 2, except that both sides of each kraft liner are treated with a specially prepared asphalt. Weight—64 lbs.

PAPER No. 3—Two (2) sheets of No. 1 kraft combined together with asphalt and reinforced with a diamond mesh jute yarn. Weight—40 lbs.

PAPER No. 3, Vapor-Proofed—Similar to No. 3, except that both sides of each kraft liner are treated with a specially prepared asphalt. Weight—56 lbs.

SUPER REINFORCED PAPER—Two (2) sheets of No. 1, kraft combined together with two (2) layers of asphalt and one (1) layer of seven-ounce burlap. Weight—106 lbs.

SUPER REINFORCED PAPER, Vapor-Proofed—Similar to Super Reinforced, except both sides of each kraft liner are treated with a specially prepared asphalt. Weight—120 lbs.

30-30 DUPLEX—Two (2) sheets of 30 lb. kraft combined together with asphalt. Weight—36 lbs.

30-30 DUPLEX, Vapor-Proofed—Similar to 30-30 Duplex, except that both sides of each kraft liner are treated with a specially prepared asphalt. Weight—50 lbs.

60-60 BLACK AND TAN—Two (2) sheets of 60 lb. kraft, one of them asphalt saturated, combined together with asphalt. Weight—62 lbs.

PREFACE TO INSULITE SPECIFICATIONS

SPECIFICATION FORM

The form of these specifications is that of a "Master" which includes all clauses which in ordinary practice apply to average work. All clauses, obviously, do not apply to every building. In formulating the specifications for a particular building, only those clauses which apply should be selected for inclusion. Special provisions or methods but seldom required are not included —such clauses should be added wherever necessary to clearly define the procedure and especially to obviate controversy involving responsibility and cost.

NOTES

Notes in italics are explanatory or advisory only and should not be included in the specification.

SELECTIVE WORDS

Wherever words or phrases occur in the body of the specification paragraph printed in italics and enclosed in parentheses, choose that word or phrase which applies to the particular work, omitting those that are irrelevant. Wherever the word "Specify" occurs in italics enclosed in parentheses, thus (*specify*), add the particular word or clause applicable.

INSULITE BILDRITE SHEATHING

SECTION 1
MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall areas to be covered.*

(2) MATERIAL

Sheathing shall be Insulite Bildrite Sheathing as made by The Insulite Company, Minneapolis, Minn. Boards shall be $^{25}/_{32}$ in. thick, 4 ft. wide x 8, 8½, 9, 9½, 10 and 12 ft. long as best adapted to framing conditions.

(3) APPLICATION

(3a) General—Insulation continuity shall be maintained. Apply sheathing with the length parallel with framing members, linen face exposed to show marking for nail spacing. Boards shall be of sufficient length to completely span between sills and plates or other structural nailing members. Provide headers cut between framing members at all intermediate end joints, particularly at second floor line in balloon construction to form fire stop and nailing base for sheathing. Provide wood nailing base at necessary points to accommodate service outlets, brackets, shutters. All joints shall center over framing members.

(3b) Spacing—Space boards ⅛ in. apart at all edges. At window and door frames bring sheathing in close contact with frame members.

(3c) Nails—Use 8d common nails.

(3d) Nailing—First nail sheathing to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart on centers and not less than ⅜ in. from the edges. On intermediate framing members, space nails 6 in. apart O.C. Drive nails until the heads are slightly below the surface.

Note: *Proper spacing of nails is indicated by marking on the fine screen surface of each board of Insulite Bildrite Sheathing.*

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply. Bildrite is not a nailing base.*

(1A) CONSTRUCTION

Framing shall be 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturing Association for all wood framing.

(2A) WOOD SIDING

All joints shall butt over the center of a stud. Nail through sheathing to each stud using nails of sufficient length to pass through the sheathing and penetrate the stud at least 1 in. For siding with butt thickness of ½ in. or less, use 8d nails. For all siding with butt thickness over ½ in., use 10d nails.

Note: *Building paper under siding is not necessary when Insulite Bildrite Sheathing is used.*

(3A) WATERPROOF FELT

Note: *Include under slate and tile roofing.*

Over the sheathing, under the furring strips, apply a continuous course of (*specify brand and weight*) water-proof felt.

(4A) FURRING STRIPS FOR SHINGLES

(4A1) Provide 1 x 2 in. wood furring strips laid at right angles to framing members, over the sheathing and waterproof felt, properly spaced to take shingles, slate, tile, and similar rigid wall and roof covering. Nails shall be of sufficient length to pass through the sheathing and penetrate the framing members at least 1 in.

Note: *Building paper is not necessary on vertical surfaces under furring strips when Insulite Bildrite Sheathing is used.*

(4A2) Provide a 1 in. thick solid wood base over Bildrite under all metal work, such as gutter aprons, valleys, hips, ridges, saddles, etc. to which to attach the metal in accordance with standard practice. Provide 2 x 4 in. headers spaced 16 in. O. C. cut in between rafters to form firm nailing for ends of boards laid parallel with the rafters.

(5A) EXTERIOR STUCCO

(5A1) Flashings—Flash over the head casings of all windows and doors with metal.

(5A2) Waterproof Building Paper—

Note: *Insulite No. 1 Vapor-Proofed may be placed under stucco base to protect against moisture infiltration through stucco cracks.*

(5A3) Self-Furring Stucco Base—Self-furring stucco bases, various forms of self-furring wire and expanded metal lath, shall be applied directly over Bildrite (*and building paper*), nailing or stapling through the sheathing into the studs with standard penetration into the wood.

(5A4) Non-Furring Stucco Bases—Provide 1 x 2 in. wood furring strips nailed vertically to each stud over Bildrite (*and building paper*) to form furring for metal lath stucco base. Nails shall be of sufficient length to pass through the sheathing and penetrate the framing members at least 1 inch.

(6A) MASONRY VENEER

Masonry veneer shall be laid in the usual manner allowing not less than ½ in. space between the face of the Bildrite and the back of the veneer.

Metal ties for masonry veneer shall be nailed through Bildrite into the studs. Nails shall be of sufficient length to pass through the sheathing and penetrate the studs at least 1 inch.

Note: *Building paper is not necessary under masonry veneer when Insulite Bildrite Sheathing is used.*

SECTION . . . 2
MASTER SPECIFICATIONS

INS-LITE AND GRAYLITE FOR EXTERIOR USE

Note: *Ins-Lite and Graylite may be used to advantage in many classes of work as an exposed exterior finish over frame construction.*

(1) WORK INCLUDED

Note: *Here list and locate the wall surfaces to be covered. If more than one thickness is used or more than one type of surface exposed, list separately.*

(2) FRAMING

Studs shall be framed to conform accurately to the design of board spacing or paneling, set 16 in. O. C. Use additional studs and headers where necessary. Provide headers back of all horizontal wood trim. Where necessary, straighten and stay studs back of joints to provide central bearing under them.

(3) MATERIAL

Exterior finish shall be (*Ins-lite*) (*Graylite*) Board as made by The Insulite Company, Minneapolis, Minn. Boards shall be free from surface imperfections (½ *in.*) (¾ *in.*) (*1 in.*) thick (*as designated in paragraph 1*), 4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long as best adapted. Exposed surface shall be (*Burlap*) (*Linen*) texture.

(4) APPLICATION

(4a) General—Moisten and pile Insulite boards one day before application. Remove boards from the pile just prior to nailing to the framing. Moistening shall be accomplished by sprinkling lightly with sprinkling can or from a broom dipped into a pail of water.

Apply boards with the length parallel with framing members (*Burlap*) (*Linen*), face exposed. All joints shall center over framing members.

(4b) Spacing—Space boards ⅛ in. apart at all edges. At window and door frames bring boards in close contact with frame members.

(4c) Nails—

(4c1) Use standard ⅜ in. head, 1½ in. galvanized roofing nails for ½ in. thick boards.

(4c2) Use 8d galvanized or coated nails for (¾ *in.*) (*1 in.*) thick boards.

(4d) Nailing—First nail Insulite to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart O. C. and ⅜ in. away from the edge. On intermediate framing members, space nails 6 in. apart O. C. Drive nails until the heads are slightly below the surface.

(4e) Painting—

Note: *Painting should be done before battens or wood trim is applied over the joints. Wherever exposed directly to the weather, the Insulite surface should be sized and painted in accordance with Insulite specifications.*

(4f) **Battens and Wood Trim**—Apply battens and wood trim (*as detailed*) over Insulite boards with nails of sufficient length to pass through the boards and penetrate the framing members at least 1 inch.

INSULITE LOK-JOINT LATH

SECTION 3
MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used, list separately and the respective locations or areas covered.*

(2) MATERIAL

Plaster base shall be Insulite Lok-Joint Lath as made by The Insulite Company, Minneapolis, Minn. Lath units shall be (*½ in.*) (*¾ in.*) (*1 in.*) thick (*as above designated*), 18 in. wide x 48 in. long, delivered to the building site in the original packages.

(3) APPLICATION

(3a) **General**—Do not moisten lath units before application. Start at ceiling and work down. Apply lath at right angles to the framing (*or furring*) members with galvanized wire "loks" out and at the bottom of the unit. End joints shall center over framing members. Stagger end joints in successive courses.

Where cutting is necessary, the lath shall be scored with the point of the lather's hatchet and broken along the scored line. Cut units so that "loks" will occur midway between supports. Where piecing out is necessary, use only strips of Lok-Joint Lath. Accurately cut and fit lath around all electric outlet boxes, piping, etc.

Next to the last course of lath on both walls and ceilings shall not be nailed securely until the last course is locked in place.

(3b) **Spacing**—Space ends of boards 3/16 in. apart. Bring locked shiplapped edges together in moderate contact.

(3c) **Nails**—

(3c1) Use No. 13 gauge, 1⅛ in. long, blued plasterboard nails with 5/16 in. heads for ½ in. thick Lok-Joint Lath.

(3c2) Use No. 13 gauge, 1¾ in. long, blued plasterboard nails with 5/16 in. heads for (*¾ in.*) (*and*) (*1 in.*) thick Lok-Joint Lath.

(3d) **Nailing**—First nail units to intermediate supports, then at ends. Space nails approximately 4 in. apart and not closer than ⅜ in. to edges.

(3e) **Angle Reinforcement**—All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips. Reinforcement shall be securely stapled over Insulite Lath.

SUPPLEMENTARY PROVISIONS

Note: *Provide for the following in other specification divisions when and where they apply.*

(1A) CONSTRUCTION

Framing shall be 12 or 16 in. on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.

(2A) FURRING

Fur all exterior masonry walls to receive Insulite Lath with (*1 x 2 in.*) (*specify*) furring strips set 12 or 16 in. O. C. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3A) GROUNDS

Furnish and erect, substantially secured to framing members through the Insulite Lath, full ½ in. wood grounds for all interior wood trim.

Where (*¾ in.*) (*1 in.*) thick Insulite Lath units are used, add the necessary trim grounds on all door and window frames to compensate for this thickness plus a full ½ inch of plaster.

(4A) PLASTERING

(4A1) **Caution**—Do not wet Insulite Lath before applying plaster.

(4A2) **Inspection**—Inspect nailing and notify lather of any portions of Insulite Lath not adequately secured in accordance with paragraph No. 3 above. See that all corners and angles are reinforced with metal corner beads accurately set to line with grounds and that all re-entrant angles are reinforced with expanded metal angle strips.

(4A3) Plaster—Use standard gypsum cement plaster or gypsum wood fiber plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Both scratch and brown coat shall be mixed to a wet consistency to allow for application with light trowel pressure and to facilitate darbying. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum mixed in accordance with the manufacturer's specifications.

Note: *Lime plaster or lime gauged with gypsum should not be used for scratch and brown coats.*

(4A4) Application—Apply in three (3) coats to full ½ in. grounds in accordance with the plaster manufacturer's specification. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary, and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ in. plaster thickness.

Note: *The maintenance of a uniform full ½ in. thickness of plaster cannot be too strongly stressed. Most plaster defects where a fibrous or board plaster base is used may be attributed to a weak, thin plaster coat, inadequate to withstand the normal building strains of shrinkage, settlement, and vibration.*

In applying the scratch coat of plaster, this shall be carefully pressed into all joints.

If the brown coat becomes stiff and sets during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface.

Darby strokes shall be in the direction of framing members, the darby spanning two studs or joists.

(4A5) Ventilation—Provide adequate ventilation for the proper drying of the plaster.

Note: *Due to moistureproof characteristics of Insulite Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.*

(4A6) Heat—Provide adequate heat to prevent injury by frost.

(5A) ELECTRIC OUTLETS

Where ¾ in. or 1 in. thick Insulite Lath units are used, set electric outlet boxes to accommodate a full 1¼ in. or 1½ in. thickness respectively from face of stud or joist to face of plaster.

SECTION . . . 4 MASTER SPECIFICATIONS — INSULITE INTERIOR WALL AND CEILING MATERIALS

INS-LITE, GRAYLITE, SATINCOTE AND SMOOTHCOTE

Sizes: 4 ft. wide x 6, 7, 8, 8½, 9, 10 and 12 ft. long. (Also 6 x 8 ft., 6 x 12 ft., 8 x 8 ft., and 8 x 12 ft. in Ins-Lite and Graylite only).

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one thickness is used or more than one type of surface exposed, list separately and the respective locations or areas covered.*

(2) FRAMING

(2a) Studs and joists shall be framed to conform accurately to the design of board spacing or paneling, set 12 or 16 in. o.c. Use additional studs, joists, and headers where necessary. Provide headers back of all wainscot caps, chair rails, baseboards, and other heavy wood trim.

(2b) It is imperative for satisfactory results that framing to receive Insulite interior materials shall be selected for straightness and uniform thickness to form a true, even nailing base. Bent studs shall be straightened by notching and wedging from the concave side. Framing members that are bent sideways so that the Insulite joint will not center on the bearing shall be forced into position with cut-in headers.

(2c) Fur masonry walls with (*1 x 2 in.*) (*specify*) furring strips set 12 or 16 in. o.c. accurately shimmed to a true, level plane. Secure substantially to masonry.

(3) MATERIAL

Interior finish shall be (*Ins-Lite*) (*Graylite*) (*Satincote*) (*Smoothcote*) as made by The Insulite Company, Minneapolis, Minn. Boards shall be (*½ in.*) (*¾ in.*) thick (*as designated in paragraph 1*), size (*area*) as best adapted, free from surface imperfections, and edges where not covered by trim or battens free from deleterious dents and abrasions. Exposed surfaces shall be (*Burlap*) (*Linen*) (*Smoothcote*) (*Satincote*) finish.

(4) CUTTING

All cutting and fitting shall be done in a neat, workmanlike manner. Where joints are not exposed, cut with a fine tooth saw, using a sharp blade with rapid strokes and a minimum of pressure. Where joints are exposed, cut with a sharp linoleum knife against a straight edge, or with a fiber board cutting tool.

(5) BEVELING AND ROUNDING EDGES

(5a) (*Beveling*) [(*and*)](*rounding*) of edges of Insulite material shall be done in a uniform, workmanlike manner, straight and true to line before they are erected.

(5b) Beveling shall be done with a beveling tool or with sandpaper or emery cloth wrapped around a wood block.

(5c) Rounded edges shall be accomplished by means of a piece of sandpaper held in the hand.

(6) BATTENS

(6a) Insulite battens shall be (*specify finish, thickness and width*) with edges neatly (*beveled*) (*rounded*) (*specify*).

(6b) Wood battens shall be (*specify thickness, width, design*).

(7) METAL JOINT MOULDINGS

Note: *There are various sizes and designs of stainless steel, aluminum, and other metal mouldings manufactured for use in covering the joints of insulating wall boards.*

Metal joint battens shall be as detailed made by (*specify name of manufacturer, type of metal and finish*).

(8) APPLICATION

(8a) **General**—Insulite boards shall be applied immediately prior to the erection of interior wood trim. The boards shall be placed singly around the room and allowed to stand at least 24 hours before erection to allow adjustment to atmospheric conditions. In exceptionally dry weather moisten the boards lightly on side facing supports and pile them 24 hours before erection.

Note: *Insulite boards, like other materials used in interior construction (such as wood trim), respond to some extent to changes in humidity and temperature; consequently discretion should be exercised in their application.*

Apply boards with the length parallel with framing members with (*Burlap*) (*Linen*) (*Smoothcote*) (*Satincote*) face exposed. All joints shall center over framing members.

(8b) **Spacing**—

(8b1) **Battened Joints**—Space boards ⅛ in. apart at edges.

(8b2) **Exposed Joints**—Bring boards to a moderate contact. Do not force into place.

(8c) **Nails**—

(8c1) For ¼ in. and ½ in. thick boards, use standard 1½ in. galvanized roofing nails with ⅜ in. heads where joints are covered with battens or wood trim. Use 1½ in. finishing nails where nailing is exposed, driving nails at an angle of 45 degrees alternating from nail to nail.

(8c2) For ¾ in. thick boards, use 8d common nails where joints are covered with battens or wood trim. Use 2 in. finishing nails where nailing is exposed.

(8d) **Nailing**—First nail boards to intermediate framing members and then nail the edges. At all edges space nails 3 in. apart o.c.

(8e) **Battens and Wood Trim**—Apply battens and wood trim (*as detailed*) over boards with nails of sufficient length to pass through them and penetrate the framing members at least 1 inch.

(8f) **Metal Moulding**—Apply metal mouldings as detailed. (*Specify any particular method of attachment.*)

SATINCOTE

Sizes: 6, 8, 10, 12, and 16 in. widths—8, 9, 10, and 12 ft. lengths.

(9) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list and locate separately.*

(10) FRAMING

Note: *Where units are applied directly to framing members, framing shall be as specified in paragraph 2, page 16.*

(10a) Units to be placed vertically over 1 x 2 in. furring strips applied horizontally, 8 to 12 in. o.c. over the studs.

(10b) Units to be applied horizontally to studs 12 or 16 in. o.c.

(11) MATERIAL

Interior finish shall be Satincote as made by The Insulite Company, Minneapolis, Minnesota. Units shall be ½ in. thick, beaded and (*specify length and width*) with V-W joints, delivered to the building site in the original manufacturer's packages.

(12) CUTTING

Note: *As specified in paragraph 4, page 16.*

(13) APPLICATION

(13a) General—Apply units with Satincote surface exposed.

(13a1) Units shall be applied at right angles to the framing members. End joints shall be centered over framing members.

(13a2) Units shall be applied over (*solid wood backing*) (*firm plaster backing*) in accordance with the detailed drawings for the interior finish.

Note: *Use (13a1) where units are applied to framing members; (13a2) where units are applied to a solid backing.*

(13b) Spacing—Bring units to a moderate contact at interlocking edges. Do not force into place. End joints shall be spaced ⅛ in. apart.

Note: *On horizontal applications, the end joints may be made to form part of the wall pattern by beveling the ends, or by using metal mouldings.*

(13c) Applying—Apply units to wall surface with (*specify type*) (*acoustical cement*) (*and*) (*finishing nails*).

(13c1) Cementing and Nailing—Apply (*specify type*) acoustical cement in spots, one on each edge, at each nailing position. After placing the unit in place, drive nails at an angle starting the nail at the intersection of the bevel and the exposed surface of the unit. Use a nail at each edge and not more than 16 in. apart.

(13c2) Nailing—Nail units to each framing member with one nail at each edge, driven at an angle and started at the intersection of the bevel and the exposed surface of the unit. Set the nail neatly below the surface.

(13d) Nails—(*Use 1½ in. finishing nails for ½ in. thickness*).

(13e) Overlays, Trim—Apply (*decorative overlays*) (*metal mouldings*) (*wood trim*) over the boards with (*nails*) (*screws*) of sufficient length to pass through them and penetrate the backing at least 1 in.

INS-LITE, GRAYLITE, SATINCOTE AND SMOOTHCOTE

Sizes: 12 x 12 in. up to 16 x 32 in.

(14) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is exposed, list separately and the respective locations or areas covered.*

(15) WOOD NAILING BASE AND FURRING STRIPS

(15a) Wood Nailing Base—Cover framing with a wood sub-base consisting of No. 1 Common Grade of Douglas Fir, West Coast Hemlock, or equivalent, matched $^{25}/_{32}$ in. lumber to form a continuous nailing base.

(15b) Furring Strips—1 x 2 in. furring strips shall be applied to the framing members, so placed as to form a firm nailing base for the units. Spacing shall not exceed 16 in. o.c.

Note: *Use (15a) or (15b) where Insulite units are not applied over plastered surfaces.*

(16) MATERIALS

Interior finish shall be *(Graylite)* (*Ins-lite*) (*Smoothcote*) (*Staincote*) as made by The Insulite Company, Minneapolis, Minnesota. The units shall be (*½ in.*) (*¾ in.*) *thick x* (*12 x 12 in.*) (*12 x 24 in.*) (*16 x 16 in.*) (*24 x 24 in.*) (*16 x 32 in.*) beveled both sides with V-W joint.

(17) CUTTING

Note: *As specified in paragraph 4, page 16.*

(18) APPLICATION

(18a) General—Insulite shall be laid in exact accordance with the detail drawings with (*Burlap*) (*Linen*) (*Texture*) (*Satincote*) (*Smoothcote*) exposed.

(18b) Spacing—Bring units to a moderate contact. Do not force into place.

(18c) Cement—Cement shall be (*specify*).

(18d) Nails—Use (*4d finishing nails for ½ in.*) (*2 in. finishing nails for ¾ in.*)

Note: *Use zinc-coated nails where high humidities prevail.*

(18e) Cementing and Nailing over Plaster Base—Apply spots of cement to the back surface near each corner with additional spots approximately 10 in. apart on larger units. Exercise care to prevent cement from appearing on exposed surface. Press and slide the unit into position, level and true, and nail into position with one or two nails at each corner and additional nails as required. Drive nails at an angle and set neatly below the surface. Start nail at intersection of bevel and surface of unit.

Note: *Use the above method only where the plaster is sound.*

(18f) Nailing over Wood Backing (Continuous or Furring Strips)—Nail Unit in position using two nails at each corner and additional nails as required. Use 4 penny finishing nails (2 in. finishing nails for ¾ in.) and drive straight or at a slight angle with heads set neatly below the surface. Start nail at intersection of bevel and surface of unit.

(18g) Overlays—Apply decorative overlays by spot cementing and nailing or by nailing only. Use nails of sufficient length driven at an angle with heads set to assure adequate penetration of nailing base.

INSULITE ACOUSTILITE

(19) WORK INCLUDED

Note: *Here list and locate definitely the wall and ceiling areas to be covered. If more than one type of surface is used, list separately with the respective locations or areas covered. Accurate, detailed elevations of walls and plans of ceilings showing disposition and sizes of units should be included in the drawings and referred to here.*

(20) WOOD NAILING BASE AND FURRING STRIPS

(20a) **Wood Nailing Base**—As specified in paragraph 15a, page 18.

(20b) **Furring Strips**—1 x 2 in. furring strips shall be applied to the framing members, so placed to form a firm nailing base for the units. Spacing shall not exceed 12 in. o.c.

Note: *Use (20a) or (20b) where Acoustilite is not applied over plastered surfaces.*

(21) MATERIALS

Acoustical material shall be Acoustilite as sold by The Insulite Company, Minneapolis, Minn. Acoustical units shall be Travertine textured surface, beveled four edges. (*¾ in.*) (*1½ in.*) thick x (*6x12 in.*) (*12x12 in.*) (*8 x 16 in.*) (*16 x 16 in.*) (*12 x 24 in.*) (*24 x 24 in.*) (*as indicated on details*).

(22) CUTTING

All cutting and fitting shall be done in a neat workmanlike manner. Cut with a fine tooth saw using a minimum of pressure.

Note: *For best results, place a wood piece immediately below the unit and one over it, both along the line to be cut. These will serve as a guide for the work and at the same time confine the tile during the sawing operation.*

(23) APPLICATION

(23a) **General**—Acoustilite shall be laid in exact accordance with the detail drawings.

(23b) **Spacing**—Bring units to a moderate contact. Do not force into place.

(23c) **Cement**—Cement shall be (specify).

Note: *A fairly plastic and easily worked cement is preferable to one which is stiff and difficult to work.*

(23d) **Nails**—Use (*5d finishing nails for ¾ in.*) (*8d finishing nails for 1½ in.*)

Note: *Use zinc-coated nails where high humidities prevail.*

(23e) **Cementing and Nailing Over Plaster**—

Note: *As specified in paragraph 18e on page 18. Care should be exercised in pressing and sliding the units into place so as not to indent the surface.*

(23f) **Nailing Only Over Plaster**—Nail units in position with two nails at each corner and additional nails as required for larger sizes of units. Drive nails at 45 degree angle and set nails neatly below the Acoustilite surface.

Note: *Use the above method only where the plaster is sound.*

(23g) **Nailing over Wood Backing** (*Continuous or Furring Strips*)—Nail units in position using two nails at each corner and additional nails as required for larger sizes of units. Drive nails straight or at a slight angle with heads set neatly below the Acoustilite surface.

DECORATING INSULITE WOOD FIBER BOARDS

SECTION 5
MASTER SPECIFICATIONS

Note: *The decorative possibilities of Insulite boards have been demonstrated in thousands of installations. They are frequently used as interior finish in their natural state, but may be finished with stains, paints, plastic paints, wall coverings, if desired. However, painting and finishing methods entirely satisfactory for plaster or wood surfaces are not necessarily most suitable for Insulite boards.*

(1) STAINS

Note: *Stains may be used where the natural color of the material is to be modified without destroying the surface texture. Glue stains have been found to give the best results. Alcohol stains are not recommended being found to dry too rapidly leaving unavoidable brush marks and streaks. Following is a satisfactory glue stain:*

Dissolve ½ lb. of flake or ground glue to the gallon of boiling water. After the glue has been thoroughly dissolved, add dry colors in amounts to produce the depth of tone and color required. Stir the dry colors in water to form a thin paste before adding to the glue solution.

Apply the glue stain promptly after preparation, preferably while still warm.

(2) SIZING

Note: *Insulite boards, except for the application of stains and water paints and certain types of plastic paint, require a sizing coat. A size or primer that completely seals the surface pores will make it possible for the paint not only to cover uniformly and smoothly, but to go farther as well.*

Insulite Sealer—developed primarily for priming the surface of either Ins-Lite or Graylite. Mixed, ready for use, it makes an excellent base for further paint coats.

(3) OIL OR VARNISH PAINTS

Note: *The linen and smooth surface of Insulite boards is recommended for these finishes. The use of reputable, high grade interior paints is advocated to assure the best results. These may be obtained to produce varying degrees of luster, such as gloss, semi-gloss or eggshell and flat. In two coat work, the second coat may be brush stippled, sponge stippled in one or more contrasting tones, or glazed, all accomplished in the standard manner.*

Brushing lacquers, bronzing liquids, and other similar finishing materials may be applied to sized Insulite boards.

(3a) **Sizing**—Thoroughly size the surface with Insulite Sealer, following instructions as given on the container. Allow sealer to dry for at least 24 hours before applying the first coat of paint.

(3b) **Painting**—Over the sizing apply two coats of (specify brand and manufacturer) paint.

Note: *Describe further any particular surface finish.*

(4) WATER EMULSION PAINTS

Note: *If glazed, the Burlap textured surface is advocated, otherwise the Linen surface is recommended. These paints should be applied directly to the unsized surface. A single coat will give coverage, though two coats are recommended.*

(4a) **Painting**—Apply (*one*) (*two*) coats of (*specify brand and manufacturer*) paint. Paint shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(4b) **Glazing**—

Note: *These paints may also be glazed as are the varnish paints under the following directions:*

Add one (1) quart of spar varnish to the gallon of paste before mixing with water. Apply to the Insulite board surface and glaze.

Note: *Describe further the particular glaze and effect desired.*

(5) WATER PAINTS

Note: *Burlap, Linen, or Smooth surface may be used dependent on effect. Paints of this class consist of water as a vehicle plus a glue or casein binder and pigment. Ordinary calcimines are of this type. They may be applied directly to unsized Insulite boards.*

Painting—Apply one (*1*) coat of (*calcimine*) (*specify brand and manufacturer of water paint*). (*Calcimine*) (*paint*) shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions.

(6) STENCILED AND BURNED DESIGNS

Note: *Decorative designs can be used to advantage on the surface of Insulite boards. For further information on equipment suitable for such work, write The Insulite Company, Minneapolis, Minn.*

(7) PLASTIC PAINTS

Note: *The Linen surface is recommended. Plastic paints are thick paints which, when applied, can be textured by brush or tools to produce various textures. They are divided into two groups—those prepared by the addition of water to a powder and those having a linseed oil base furnished prepared ready for use.*

(7a) **Covering Joints**—Treat all joints, corners, and reentrant angles as recommended by the plastic and paint manufacturer.

(7b) **Applying Plastic Paint**—Apply plastic paint (specify brand and manufacturer) to all Insulite board surfaces. Paint shall be prepared, mixed, and applied in strict accordance with the manufacturer's directions, textured, painted or glazed, tinted as follows:

Note: *Here describe the color tone and surface texture. If more than one type is required, describe, list and locate each separately.*

(8) WALL COVERINGS

Note: *Use the Linen surface for applications of wall coverings. Papers with bold patterns are recommended. Canvas, fabrics such as Sanitas, leathers, and even thin plywoods and thin metal sheets may be applied. It must be remembered that wood and fiber boards are subject to some slight expansion and contraction, and consequently there is the possibility of a wall covering cracking at the joint. Care in following specifications is important.*

(8a) **Covering Joints**—Before applying plastic paint, treat all joints, corners, and re-entrant angles as recommended by the manufacturer.

(8b) **Sizing**—Thoroughly size the Insulite board surfaces with Insulite Sealer. After the size has completely dried, sand the surface lightly.

(8c) **Wall Covering**—

Note: *Here specify the particular wall covering. Wall paper may be applied over a lining paper if desired. If special requirements must be met, follow the manufacturer's standard recommended method of procedure.*

SECTION 6
MASTER SPECIFICATIONS

INSULITE SOUND ISOLATION
CEILINGS, WALLS AND FLOORS

Note: *Insulite Lok-Joint Lath and plaster partitions have been found by test to be more resistant to the transmission of sound than ordinary plastered partitions, but for still more satisfactory results the constructions described under this heading should be used. Where sound insulation is required, details to fit the particular construction should be given and specifications formulated along the lines of those suggested in Sections 1 to 5 inclusive to fit the particular installation.*

MATERIAL

The materials adapted to sound insulation of partitions and floors are Ins-Lite, Graylite, Smoothcote, Satincote, and Lok-Joint Lath.

PARTITIONS

For sound insulating partitions Insulite may be used in any one of three ways. One method is to use staggered stud partition with plaster applied directly to the Insulite Lok-Joint Lath. The studs should be 16 in. on center and should be nailed to a 2 x 6 sill.

The usual precautions in regard to straightness of studding should be observed.

For the best sound insulating partition between rooms the following construction should be used: 2 x 2 in. studding or 2 x 4 in. studding set flat should be 12 or 16 inches on center, nailed to a 2 x 6 sill and plate. Insulite Lok-Joint Lath should be nailed to these in accordance with specifications, Section 3, and the lath plastered. A loose layer of Insulite board should be placed between the studs. The vertical edge of the loose layer should lap for a distance of 3 or 4 inches. This is not a load-bearing partition.

For tile partitions Insulite boards should be used between a double tile partition.

CONCRETE STRUCTURAL FLOORS

When a wood floor is to be used, the Insulite board is nailed to sleepers 48 in. on center, the space between the sleepers being filled with cinder concrete. The finish floor should be nailed to 1 x 3 furring strips placed across the sleepers 16 in. on center and nailed through the board to the sleepers.

WOOD JOIST FLOORS

Insulite board may be laid directly over the rough flooring and the finished flooring nailed to the rough flooring through the board, though a floating floor is recommended. In the floating floor construction 1 x 3 furring strips should be nailed through the board to the sub-floor spaced 16 in. O. C. nailed only at 48 in. intervals—the finished flooring is then nailed to the furring strips in the usual manner.

For superior sound insulation of floors having wood joists, the first layer of Insulite board is placed on top of the sub-floor with furring strips over the board and the finish floor nailed to these strips as described above. The ceiling should be supported by independent ceiling joists. These ceiling joists should be bridged to prevent twisting and should be spaced midway between the floor joists. A layer of Lok-Joint Lath should be nailed to the ceiling joists in accordance with Section 3, and the lath plastered.

SECTION 7
MASTER SPECIFICATIONS

ROOF INSULATION SPECIFICATIONS
INTRODUCTION . . A GUIDE TO GOOD PRACTICE

GENERAL

Roof insulation is customarily furnished and applied by the roofing contractor. Too often his work has to be executed against time and frequently under unfavorable weather conditions. There are, however, certain provisions following which, if clearly set forth in the specifications, enable him to do better and more rapid work and at the same time assure a longer lifed roof to the owner.

Vapor cut-offs, seal courses and water cut-offs are approved for standard practice by the United Roofing Contractors' Association.

VAPOR CUT-OFF

While several types are used, the vapor cut-off consists essentially of a multiple layer of roofing felts or of a particular kind of "rubber" roofing nailed directly over the board deck and mopped over with hot bitumen to receive the insulation. This vapor cut-off, together with the finished roof covering applied over the insulation, sandwiches the insulation between two water and vapor-proof layers.

SEAL COURSE FOR CONCRETE AND SIMILAR DECKS

Buildings with concrete and similar decks present two major problems to the roofer. He is often forced to lay the roofing, including the insulation, before other trades have left the roof in order that plastering and other operations within the building may be completed on scheduled time. Again, he may be called upon to work during inclement weather. Damage under these conditions which may be done to both roofing and insulation may later cause the owner more or less costly replacement. To provide against such contingencies, it is recommended that the specifications provide for the application of a standard seal course which acts as a temporary waterproof covering for the entire roof area.

WATER CUT-OFFS

Provision against damage by sudden showers, overnight and week-end stopping of the insulation and roofing and assurance against spread of leaks from the sometimes seemingly inevitable defects or abuse can be made with properly installed water cut-offs through the body of the insulation. They are standard in good construction.

Their importance is such that it is suggested that the architect indicate with faint lines on the roof plan their desired locations. This assists the roofing contractor in the planning of the roofing operations divided

into isolated areas to be completed within certain working hours and serves as a permanent record of their location.

WOOD NAILING STRIPS

Insulation is not a nailing base. Therefore, it is necessary that wood nailing strips be provided on all roof decks to form a permanent, rigid nailing base for the secure attachment of all sheet metal flashing. These strips should be the full thickness of the insulation and should be at least 1 in. wider than the apron of the flashing.

Provide in the specifications under the carpentry division that the general contractor shall furnish and install these nailing strips.

RECOMMENDED NUMBER OF LAYERS

Insulite Roof Insulation is made in various laminated (stapled) thicknesses or plies up to 2 in. thick. It is made with both offset and square edge. Where square edged units are used, for the best results the insulation should be laid in two (2) layers, the second breaking joints with the first layer.

BITUMENS AND FELTS

Where coal tar pitch is used, all felts should be impregnated with the same material. Where asphalt pitch is used, use asphalt impregnated felts.

PREFACE TO SPECIFICATIONS

Read "Preface to Specifications" on page 13 in explanation of form and notes.

SECTION . . 7A
MASTER SPECIFICATIONS

INSULITE ROOF INSULATION
OVER WOOD ROOF DECKS UNDER BUILT-UP ROOFING

(1) WORK INCLUDED

Note: *List and locate the roof areas to be insulated. If more than one thickness of insulation is required on various roof areas, list and locate each separately.*

(2) INSULATION MATERIAL

Insulation shall be (*homogeneous*) (*two ply laminated*) (*stitched*) (*specify*) thick (*offset*) (*square*) edge (*Ins-lite*) (*Graylite*) Roof Insulation as made by The Insulite Company, Minneapolis, Minn., laid in (*one*) (*two*) layer(*s*). Boards shall be 22 x 47 in. All insulation shall be kept dry before, during and after application.

(3) WOOD NAILING STRIPS

Note: *To provide adequate attachment for miscellaneous sheet metal flashings, such as leader outlets, soil and vent flashings, metal base flashings, eave aprons, and gravel stops.*

The General Contractor will provide wood nailing strips to form a nailing base under all sheet metal flashing aprons and flanges of every nature. Strips shall be the full thickness of the insulation and at least 1 in. wider than the apron, rigidly secured to the roof construction with nails, lag bolts, expansion bolts, or other means of attachment as best adapted to the particular construction. This contractor shall check all nailing strips and notify the architect in writing of any defects for correction before proceeding with the laying of insulation and roofing.

(4) ROOF DECK

The surface of the roof deck shall be broomed clean, free from dirt, loose material, and thoroughly dry. All loose or springy boards shall be properly nailed before insulation is laid.

(5) BUILDING PAPER

Note: *Use this clause only in case the insulation is laid in one (1) layer.*

The entire roof area shall be covered with two (2) plies (lapped half) rosin sized building paper or 6 lb. coated felt. Nail sufficiently to hold in place until the insulation is laid over it.

Note: *Include (5) for insulation against heat loss only. Omit where high humidities are maintained.*

(6) VAPOR CUT-OFF

Over the wood roof deck lay two (2) plies (lapped half) of light weight (34 lbs. per square) bitumen prepared roofing having one side coated. Lay coated side down. Nail the back edge of each sheet with tin-capped, galvanized, barbed roofing nails spaced 12 in. O.C. All laps shall be mopped back 12 in. with hot bitumen. Do not mop over this membrane until just prior to the laying of insulation.

Note: *Include (6) only where high humidities are maintained.*

(7) APPLICATION OF INSULATION

(7a) General—Only as much Insulite Roof Insulation shall be laid over the roof area as can be covered by the finished roofing in any one day.

Lay the Insulite in (*one*) (*two*) layer(*s*) over the entire roof area. Adjoining edges of the boards shall be brought to a moderate contact but shall not be forced into place. Where the roof meets vertical surfaces, such as parapets, penthouses, etc., the boards shall be cut in a neat, workmanlike manner to insure proper joining without forcing. Boards shall be laid in parallel courses with end joints in each course breaking with those of adjoining courses.

(7b) Mopping with Vapor Cut-Off—Mop the exposed vapor cut-off felt liberally with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Note: *Include (7b) only where high humidities are maintained.*

(7c) Two Layer Insulation—

(7c1) Where insulation is laid in two (*2*) layers the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Nailing of two (*2*) layer insulation shall be through the second or top layer only. (*Do not nail the first layer.*)

Note: *Include (7c1) for insulation against heat loss only. Omit where high humidities are maintained.*

(7c2) Where insulation is laid in two (*2*) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (*at least 25 lbs. per square*) with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

Note: *Include (7c2) only where high humidities are maintained.*

(7d) Water Cut-Offs—

Note: *Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage of the roofing or defective flashings, parapet walls, copings.*

The insulation, whether laid in one (*1*) or two (*2*) layers, shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of (*coal tar pitch*) (*asphalt*) saturated roofing felt 8 to 10 in. wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 22 in. from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30 ft. on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

(7e) Nails—Nails shall be of sufficient length to pass through the insulation and penetrate the wood roof deck at least 1 in.

Note: *Include (7e) for insulation against heat loss only. Omit where high humidities are maintained.*

(7f) Nailing—Space nails 12 in. apart O.C. Each board shall be secured in place by nailing along each edge and staggered along the longitudinal center line.

Note: *Include (7f) for insulation against heat loss only. Omit where high humidities are maintained.*

(8) APPLICATION OF ROOFING

The exposed surface of the Insulite Roof Insulation shall receive a poured coat of hot (*coal tar pitch*) (*asphalt*) squeegeed or broomed to about 1/16 in. thickness. Into this poured coat, while hot, the roofing felts shall be embedded.

Note: *The above in lieu of the ordinary mopping is advocated. Roofing shall be applied in accordance with the manufacturer specifications as selected by the architect.*

INSULITE ROOF INSULATION
OVER ROOF DECKS OF MONOLITHIC CONCRETE, GYPSUM, AND UNIT TILE UNDER BUILT-UP ROOFING OR PROMENADE TILE

SECTION . . 7B
MASTER SPECIFICATIONS

(1) WORK INCLUDED

Note: *Same as Master Specification 7A, page 22.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 7A, page 22.*

(3) WOOD NAILING STRIPS

Note: *Same as Master Specification 7A, page 22.*

Note: *Omit this clause if finished roofing is of Promenade Tile.*

(4) ROOF DECK

(4a) General—The surface of the roof deck shall be reasonably smooth without depressions, broomed clean free from dirt and loose material and thoroughly dry.

(4b) Unit Tile Construction—The joints of all tiles shall be properly pointed up.

Note: *Include (4b) where deck is of cement, gypsum, book, or similar tile construction.*

(4c) Under Promenade Tile roofing—

Note: *Slope for proper drainage may be provided in either of the two following methods: the first is preferable.*

(4c1) The roof slab shall be formed flat and the drainage slopes built up over the Insulite Roof Insulation with the finished promenade tile roofing and its mortar bed.

(4c2) The roof slab shall be formed graded to all outlets with cement mortar fill before the seal course and the Insulite Roof Insulation is laid.

(5) SEAL COURSE

Note: *Recommended on all insulated roof decks, other than wood, to afford protection from rain, snow and ice that the insulation and finished roofing may be applied under favorable weather conditions and only after all other trades have left the roof.*

(5a) Priming the Deck—Prime the deck with asphalt roofing primer.

Note: *Include priming if asphalt mopping and asphalt felt are used for seal course. If coal tar pitch and felt are used, no primer is necessary.*

(5b) Mopping the Deck—(*Mop the entire roof area*) (*Spot or strip mop the individual tiles or units*) with a coat of hot (*coal tar pitch*) (*asphalt*).

Note: *If the deck is monolithic construction (concrete, poured gypsum), the mopping shall be continuous. If the deck is of precast units (book tile, precast gypsum, concrete), spot or strip mop the individual units.*

(5c) Laying the Seal Course—Over the mopping while hot, lay one (*1*) layer of 14 lb. (*coal tar pitch*) (*asphalt*) saturated roofing felt with 2 in. laps. Turn the felt up 4 in. against all walls and vertical surfaces and stick with pitch and provide temporary thimbles at all leader heads, etc., to the end that the roof will be reasonably watertight against rain and melting snow. Do not mop over this membrane until just prior to the laying of insulation.

(6) APPLICATION OF INSULATION

(6a) Mopping the Seal Course—Mop the exposed seal course felt liberally with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each insulite board shall be mopped at a time.

(6b) General—

Note: *Same as (7a) General, Master Specification 7A, page 23.*

(6c) Two Layer Insulation—Where insulation is laid in two (2) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (*at least 25 lbs. per square*) with hot (*coal tar pitch*) (*asphalt*). Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

(6d) Water Cut-offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 7A, page 23.*

(7) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 7A, page 23.*

SECTION . . 7C
MASTER SPECIFICATIONS

INSULITE ROOF INSULATION
OVER STEEL ROOF DECKS UNDER BUILT-UP ROOFING

(1) WORK INCLUDED

Note: *Same as Master Specification 7A, page 22.*

(2) INSULATION MATERIAL

Note: *Same as Master Specification 7A, page 22.*

(3) WOOD NAILING STRIPS

Note: *Same as Master Specification 7A, page 22.*

(4) ROOF DECK

The steel deck shall be securely anchored to the roof purlins and all joints shall be made rigid.

(5) SEAL COURSE

Note: *Include this seal course if the rooms beneath the roof carry high manufactured or incidental humidities. Do not use coal tar pitch mopping on steel decks.*

(5a) Mopping the Deck—Mop the entire roof area with a coat of hot asphalt.

(5b) Laying the Seal Course—Over the mopping while hot, lay one (*1*) layer of 14 lb. asphalt saturated roofing felt with 2 in. laps. Turn the felt up 4 in. against all walls and vertical surfaces and stick with asphalt and provide temporary thimbles at all leader

heads, etc., to the end that the roof will be reasonably watertight against rain and melting snow. Do not mop over this membrane until just prior to the laying of insulation.

(6) APPLICATION OF INSULATION

(6a) Mopping the (*Seal Course*) (*Steel Deck*)—Mop the exposed (*seal course felt*) (*steel deck*) with hot asphalt. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Note: *Do not use coal tar pitch mopping on steel decks.*

(6b) General—

Note: *Same as (7a) General, Master Specification 7A, page 23.*

(6c) Two Layer Insulation—Where insulation is laid in two (*2*) layers, the boards of the second layer shall be laid parallel with those of the first layer, and the joints of the second layer shall break joints with those of the first layer.

Mop the exposed surface of the first layer liberally (*at least 25 lbs. per square*) with hot asphalt. Only sufficient area to provide complete embedment of each Insulite board shall be mopped at a time.

Embed each board of the second layer firmly in the bituminous mopping.

(6d) For steep Decks—In addition to the mopping, each Insulite board shall be secured to the steel deck with three (*3*) bolts along the top.

(6e) Water Cut-Offs—

Note: *Same as (7d) Water Cut-Offs, Master Specification 7A, page 23.*

(7) APPLICATION OF ROOFING

Note: *Same as (8) Master Specification 7A, page 23.*

INSULITE COLD STORAGE INSULATION

SECTION . . . 8
MASTER SPECIFICATIONS

Note: *The maintenance of high thermal insulating efficiency in all types of cold storage construction is to a large degree dependent on quality workmanship, careful application and strict adherence to specifications.*

(1) WORK INCLUDED

Note: *Here list and locate definitely the floor, wall, and ceiling areas to be insulated. If more than one thickness is used, list separately and the respective locations or areas.*

(2) MATERIALS

Insulation shall be Insulite (*Ins-Lite*) (*Sealdslab*) Cold Storage Insulation as made by The Insulite Company, Minneapolis, Minn.; units shall be (*here specify thickness and size as best adapted to the particular area to be insulated*). Asphalt shall be an approved grade of odorless asphalt. For hot application, melting point of asphalt shall be between 180 and 200 degrees F.

Note: *Hot asphalt shall preferably be used for the erection of Insulite (Ins-Lite) (Sealdslab) Cold Storage Insulation.*

All nails shall be galvanized or zinc coated. Nails to hold Insulite to wood nailing members shall be of sufficient length to penetrate nailing member at least 1 in. Nails to secure successive layers of Insulite on ceilings shall be ½ in. longer than combined thickness of both layers and driven at an angle of 45 degrees.

(3) GENERAL SPECIFICATIONS

(3a) Preparation of Surfaces—All surfaces shall be dry, even, and free of all loose materials. All masonry surfaces shall be primed with an approved grade of asphalt primer and allowed to dry until tacky before applying insulation. All wood surfaces shall be securely nailed, free from large cracks and knot holes and covered with a membrane consisting of two thicknesses of waterproof paper nailed to surface. Edges of paper to be lapped at least 2 inches.

(3b) Cutting—All cutting and fitting shall be done in a neat, workmanlike manner. Cutting shall be done with a fine tooth sharp saw with a minimum "set" on teeth, using rapid strokes and a minimum of pressure. (*A power saw is preferable.*)

(3c) Dipping—All Insulite Cold Storage Insulation units shall, immediately prior to their application, be dipped in hot asphalt. Face and all edges of units to be bonded to all or adjoining units shall be thoroughly coated.

Note: *Above is advocated irrespective of added coats of asphalt applied after units are erected. Successive coatings of waterproofing are much more effective barriers to infiltration of air and moisture than thick single coatings for the reason that air pockets and bubbles occurring in one coat are sealed up by the next.*

(3d) Application—General—(Also see specifications for floors, walls, and ceilings, (4a), (4b), (4c), (4d), and (4e).)

Units of insulation shall be tightly butted together with all joints broken or staggered. In two-layer work the second layer must break joints with the first. All insulation to be continuous where possible and there shall be no through joints, particularly at intersection of walls with floors and ceilings.

After thoroughly coating with asphalt, slide units into position and spank or firmly press units to insure uniform adhesion for first and all succeeding layers.

On walls and ceilings of frame construction over sound wood sheathing, first layer of insulation, after dipping in asphalt, shall be secured in place with two nails per square foot. Second and succeeding layers of insulation shall be secured to preceding layer of insulation with no less than one nail per square foot. Nailing of second and succeeding layers of wall insulation is optional and may be omitted.

(3e) Surface Finishes—All (*Ins-Lite*) (*Sealdslab*) Cold Storage Insulation exposed surfaces (except floors) shall be given a finish of not less than ⅛ inch of an approved asphalt mastic applied in accordance with manufacturer's specifications in not less than two coats or not less than ½ inch of Portland cement plaster applied in two coats and containing an integral waterproofing (used in proportions as directed by the manufacturer). When Portland cement is used as a finish, the surface to receive the plaster shall have emulsified asphalt applied in accordance with asphalt manufacturer's recommendations on grade and coverage.

Note: *Recommended precaution: Reinforce the Portland cement plaster with a light wire mesh by tacking only sufficiently to hold it in place over the surface of the insulation before applying the first coat of plaster.*

Second or finish coats of Portland cement plaster shall be scored vertically and horizontally to control cracks and all external corners shall be protected with metal corner beads or angle iron.

Where surfaces are subject to abrasion or damage by trucks, barrels, etc., buffers of plank or other suitable material shall be provided over finished surface.

(4) DETAILED SPECIFICATIONS

(4a) Floors—The prepared surface shall be flooded with hot asphalt to a uniform coating. While asphalt is still hot, apply first layer of insulation. The second and succeeding layers shall be secured together in a like manner. Apply flood coat of asphalt over final layer of insulation, and pour (*specify*) inches of concrete as subfloor. Wearing surface of concrete or other types of floor covering to be applied over concrete subfloor.

(4b) Masonry Walls—All uneven surfaces shall be given a leveling coat of Portland cement plaster or asphalt mastic to a true and even surface.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4c) Frame Walls—

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4d) Frame Ceilings—Each unit of the layers of insulation succeeding the first layer shall be shored in place until asphalt has set sufficiently to hold.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

(4e) Concrete Ceilings—

(4e1) New Construction—Provide anchorage in slab such as wood sleepers, bolts, or clips to which shall be fastened a series of kiln dried preservative treated wood strips the same thickness as the first layer of insulation, and spaced with exact clear space between strips to accommodate width of insulation units.

(4e2) Existing Construction—Drill slab and insert expansion bolts not less than ¼ in. in diameter to receive series of wood strips. Bolts along each strip to be not more than 4 ft. O.C. Thickness, type, and spacing of wood strips shall be same as (4e1).

Dip first layer of insulation in hot asphalt and apply between the wood strips, toe-nailing through units into wood at each edge not more than 12 in. O.C. Dip second layer of insulation in hot asphalt and apply at right angles to the first layer and nail not more than 12 in. O.C. to the wood strips in the first layer. Each unit of succeeding layers of insulation shall be shored in place until asphalt has set sufficiently to hold, and all units nailed to preceding layer of insulation with not less than one nail per square foot.

Note: *Follow specifications (3a), (3b), (3c), (3d), and (3e) as they apply to this type of construction.*

SECTION . . . 9 MASTER SPECIFICATIONS — INSULITE MATERIALS FOR INTERMEDIATE SPACES

INSULITE FIBEROCK

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall, ceiling, floor, and roof areas to be insulated.*

(2) MATERIALS

Insulation shall be Insulite Fiberock as sold by The Insulite Company, Minneapolis, Minnesota.

(2a) Insulation shall be *(Fiberock Batts) (Fiberock Jr. Batts) (Fiberock Wall-Seal Batts) (Fiberock Jr. Wall-Seal Batts) (Fiberock Pads).*

Note: *Recommended for walls, ceilings, floors and roofs of new structures or for ceilings and roofs of existing structures.*

(2b) Insulation shall be *(Fiberock Wall Fill) (Fiberock Pre-packed Fill).*

Note: *Particularly recommended for ceilings and roofs of existing structures, for packing around door and window frames in new structures or where framing requirements or location make this type more practicable to install than the Batt type.*

(2c) Insulation shall be Fiberock Granulated Fill.

Note: *Particularly recommended for hand pouring or machine blowing.*

(3) APPLICATION—NEW STRUCTURES

Provide a continuous blanket of Fiberock of the specified type and thickness over the entire area to be insulated, as provided herein and shown on the drawings. Take care to fit or pack the insulation uniformly between the framing members. Fill all irregular

spaces, particularly around door and window frames, with insulation cut to fit.

(3a) **Insulite Fiberock Wall-Seal Batts and Junior Wall-Seal Batts.** Apply the insulation with the paper-backing exposed. Place the batts snugly end to end between the framing members with paper flanges overlapping so as to provide a continuous vapor seal. Tack or staple paper flanges to studs or rafters.

(4) APPLICATION—EXISTING STRUCTURES

Provide a continuous blanket of insulation over the entire area to be insulated.

(4a) Use Fiberock Batts, Loose Fill or Prepacked Fill in open areas in attics.

(4b) Use Fiberock Granulated Fill "blown in" or hand poured in enclosed areas or second floor ceilings.

INSULITE SIDING MATERIALS

SECTION . . . 10
MASTER SPECIFICATIONS

BRIKLITE SIDING

(1) WORK INCLUDED

Note: *Here list and locate the exterior wall areas to be covered.*

(2) MATERIAL

Exterior finish shall be Briklite Siding as sold by The Insulite Company, Minneapolis, Minn.

Caulking material, used in connection with Siding, shall be Briklite Mastic.

(3) APPLICATION

(3a) **General**—Briklite Siding shall be applied over existing exterior finish of wood shingles, bevel siding or novelty siding, or directly to wood sheathing. The surface to receive the Siding is to be firm and reasonably even, loose boards or shingles are to be well nailed down. First a course of block units is to be placed around the perimeter of the building and is to extend one inch below present finish, but not closer than two inches to grade line. Overlapping corner units are to be applied along all exterior corners over the Siding application.

(3b) **Caulking**—Briklite Mastic is to be applied to each shiplapped joint of each unit. Wide strips of Mastic are to be applied to the back of each overlapping corner unit about one inch back from each long edge. Interior angles, where units butt together, are to be well caulked with Mastic. All nail heads are to be covered with Mastic.

(3c) **Nails**—Use 6d common rosin coated nails.

(3d) **Nailing**—All nails are to be driven into the "mortar joints" of the units, using twenty nails, per stretcher course unit, nineteen nails per block course unit, and twenty-four per each overlapping corner unit.

(3e) **Alignment**—Vertical "mortar joints" are to be aligned as would brick in a stretcher bond. Alternate courses of the stretcher course units are to be started with a one-half "brick" width cut from the left end, offsetting units by that amount.

Note: *This is necessary only at one corner chosen for starting each course. On other corners, the units are cut flush with the corner, the remaining end of the unit used to start the course on the next wall.*

(3f) **Cutting**—Units are to be cut as necessary with a sharp knife, working from the back side and using a straight edge.

INSULITE ASBESTOS SIDING SHINGLES

(1) WORK INCLUDED

Note: *Here list and locate definitely the wall areas to be covered.*

(2) MATERIAL

Siding shall be Insulite Asbestos Siding Shingles as sold by The Insulite Company, Minneapolis, Minn. Units shall be (*Pearl Gray*) (*Solid White*) in color and (*specify*) in style. The size shall be (*specify*).

(3) APPLICATION

(3a) **General**—Apply Asbestos Siding Shingles over wall surfaces of existing wood shingles, bevel siding or novelty siding, directly to wood sheathing or over furring strips on Bildrite Sheathing. Alternate courses to be started with half length units offsetting vertical joints.

(3b) **Preparation of Surface**—The surface to receive Siding to be firm and reasonably even. Loose boards or shingles to be well nailed down. Over entire surface, apply single layer of 15 lb. Asphalt Saturated felt lapped 2 in. on horizontal edges. Apply along each corner of the building an 8 inch wide strip of felt extending 4 inches along each wall surface. (*Apply a ¼ inch x 1 inch wood cant strip horizontally along bottom of wall.*)

Note: *Omit reference to cant strip when applying Siding over Bildrite Sheathing.*

(3c) Apply 1 x 4 in. furring strips horizontally over the Bildrite Sheathing spaced on center in accordance with the amount of exposure of the Siding Shingles. The first furring strip at the bottom of the wall is to be 1¼ in. thick.

Note: *Include (3c) only where Siding is to be applied to Bildrite Sheathing.*

(3d) **Backer Strips**—Apply back of each vertical joint of Siding units a 3 in. wide felt strip.

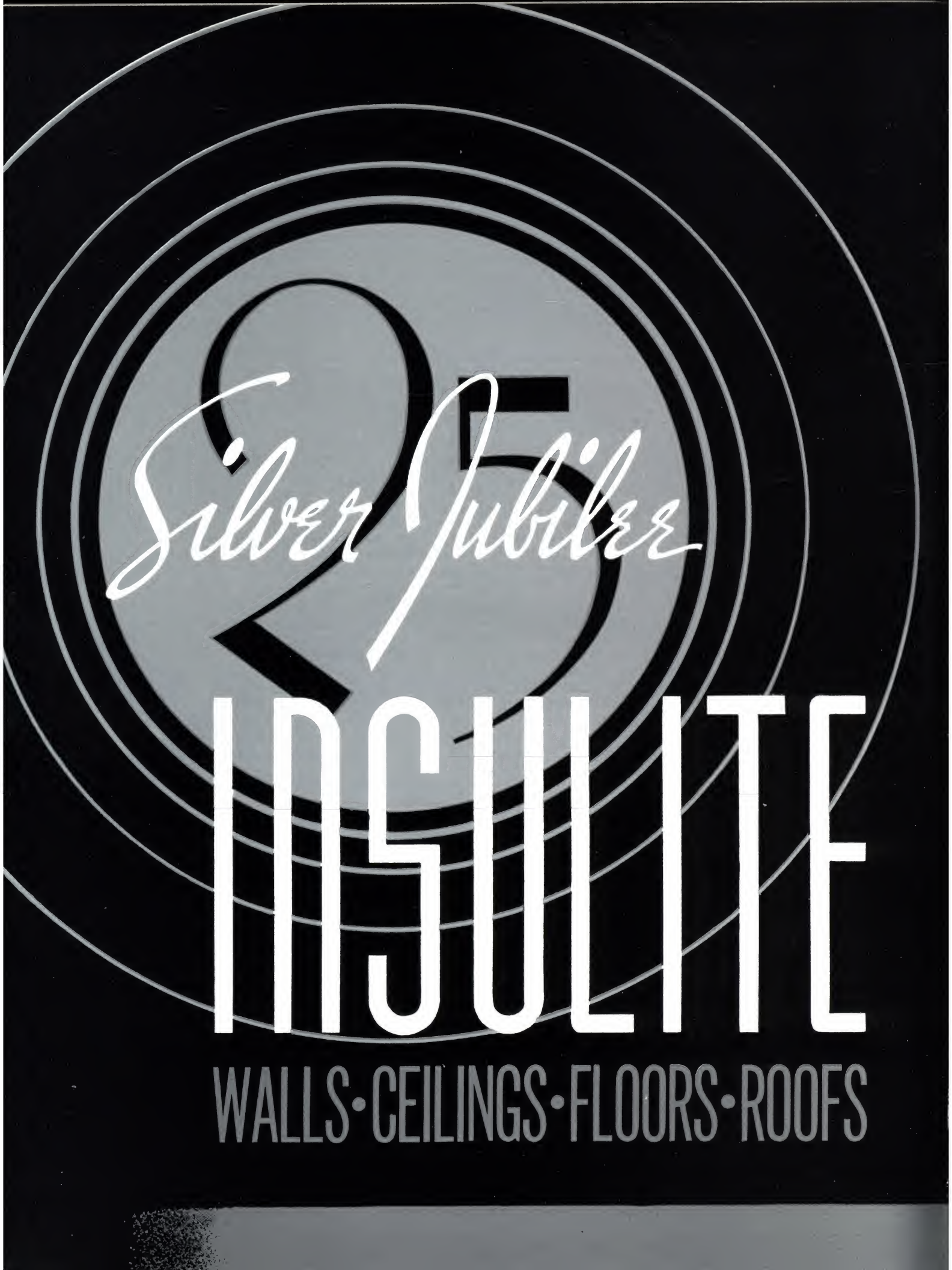
Note: *These strips furnished with Siding.*

(3e) **Nails**—Use 1¾ in. long cadmium plated Bronze Nails for face (*butt*) nailing. Use 5/16 in. head, No. 13 gauge galvanized needle point nails for head (concealed) nailing. Head nails to be 1½ in. when application is directly to wood sheathing or furring strips and 1¾ in. when over existing siding or shingles.

Note: *The cadmium plated Bronze Nails are furnished with the Siding.*

(3f) **Nailing**—The Siding Units are factory punched for proper placing. First nail upper left hand corner, then start nail in opposite upper corner. Next place the felt backer strip in place and drive second nail to snug hold. Finish top and bottom nailing.

(3g) **Corners**—The ends of Siding Shingles forming corners are to be beveled (*wood rasp may be used*) so as to form a tight well fitted joint.


Silver Jubilee
25
INSULITE
WALLS · CEILINGS · FLOORS · ROOFS

SECTION 10

CONTINUED ⟶

MEMORANDA

JOHNS-MANVILLE

EXECUTIVE OFFICES

22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

JOHNS-MANVILLE INSULATING BOARD and INSULATING LATH, 25/32" WEATHERTITE SHEATHING, DECORATIVE INSULATING BOARD, HARD BOARD and PANLBOARD.

For the following Johns-Manville products, see File Index: Acoustical Treatment and Sound Isolation Materials; Asbestos and Asphalt Shingles; Built-up and Insulated Roofs; Home Insulation; Pipe Coverings and Insulations; Asphalt Tile Flooring; Flat and Corrugated Transite Sheets; Asbestos Wainscoting and Asbestos Flexboard; Transite Walls; Flush Doors.

JOHNS-MANVILLE INSULATING BOARD PRODUCTS

J-M Insulating Board

Johns-Manville Insulating Board is a knotless, grainless, all-wood fibre board that possesses great strength. Because it is made in large units (4 ft. wide, 4 to 12 ft. long) and is so easily applied, it simplifies the construction, modernization and decoration of all interiors.

It is available in the attractive color and interesting texture of the natural finish, and in the new glaze-coat finish, a smooth surface, of warm sand color, which can be painted, stained or stenciled without priming. The natural color of J-M Insulating Board is a pleasing buff that harmonizes with practically any decorative scheme. The surface texture suggests wall fabric. For this reason, as well as for economy, it is often used without paint or other finish. Where special effects are desired, it can be painted or stained to suit. It yields readily to cutting with beveling tools, and can be so decorated on the job. Joints may be beveled, or concealed with battens.

J-M 25/32" Weathertite Sheathing conforms to millwork standards and is designed for use as sheathing under wood siding, stucco, masonry veneer or, with furring, under shingles. Made in sheets 4 ft. wide, in convenient lengths of 8, 9, 10 and 12 ft., it enables workmen to cover large areas in one-third the time ordinarily required for wood sheathing.

Besides substantially reducing labor costs, J-M 25/32" Weathertite Sheathing also helps to insulate the home against heat and cold.

JOHNS-MANVILLE
announces a
new Insulating Board Factory
now under construction at
Jarrett, Virginia
to be completed early in 1939

This, the most modern board mill in the world, will enable Johns-Manville to offer many additions and improvements, in materials and finishes, in an enlarged and most complete

NEW J-M INSULATING BOARD *LINE*

J-M Batten Strips

Batten strips of beveled Glaze-Coat finish Insulating Board are available in 2½-in. widths, in lengths of 8, 10 and 12 ft., for paneling with Insulating Board Sheets.

J-M 25/32" Insulating Board Sheathing, in large size sheets, is easily and economically erected

A modernized living room with Insulating Board ceiling and Bevel Plank walls is an attractive improvement at little cost

J-M Insulating Lath

J-M Insulating Lath is the same material as Insulating Board, except that it is furnished 18x48 in., with long edges ship-lapped, and all face edges beveled. Plaster bonds to the "gridded" surface with a strength far greater than on wood lath. J-M Insulating Lath provides a solid surface which prevents unsightly lath marks and results in a saving in plaster and labor.

J-M DECORATIVE INSULATING BOARD

Bevel and Multiple Bevel Panels, Decorative Ceiling Panels, Bevel and Beaded Bevel Plank

JOHNS-MANVILLE DECORATIVE INSULATING BOARD is one of the most economical materials available for interior decoration. Made of compressed wood fibre, it can be applied directly to the framing, in new construction, or right over the plaster of old walls and ceilings, in remodeling work.

It is made in various sizes, with a light fabric texture, or with Glaze-Coat finish, and in a number of patterned styles, including plain and beaded Bevel Plank and Glaze-Coat or Variegated finish or textured Bevel Panels.

For special designs, the large sheets can be decorated on the job by the contractor, using a cutting tool designed particularly for this work.

New Coated Surface

The new Glaze-Coat and Variegated finishes are obtained by an exclusive process recently developed by Johns-Manville. In addition to supplying color to the surface, this process actually "irons" the board, thereby giving the surface a lustrous, light-reflecting sheen. As shown in the illustrations, the Glaze-Coat finish is a warm sand color. It requires no further treatment unless special color schemes are desired. The surface treatment eliminates the need for a priming coat under paint. The Variegated finish is a blend of four harmonizing tones. To emphasize the design, all bevels and grooves are left in the natural buff color of the board.

All J-M Decorative Insulating Board products can be used for ceilings, as well as walls. Two of them, the Decorative Ceiling Panels, and the Multiple Bevel Panels are specially suitable for ceiling work. Because they can be applied without tearing off the old plaster, these products fill a long-felt need in the remodeling field.

Ceiling of Variegated Bevel Panels

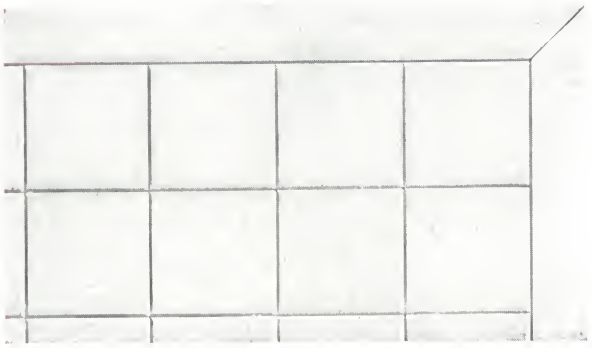
Paneled wall of standard sheets in Glaze-Coat finish

J-M Multiple Bevel Panels

J-M Multiple Bevel Panels are furnished in Glaze-Coat finish in the following sizes:

24x24 in., V-grooved 8x8 or 12x12 in.
24x48 in., V-grooved 8x8, 12x12 or 12x16 in.
16x32 in., V-grooved 16x16 in.
Thickness: ½ in. in all sizes

J-M Border Strip



J-M Border Strip, for "framing" ceiling designs, is furnished 12 in. x 8 ft. x ½ in. thick, with sanded natural finish, Glaze-Coat finish or brown finish for Variegated Blend.

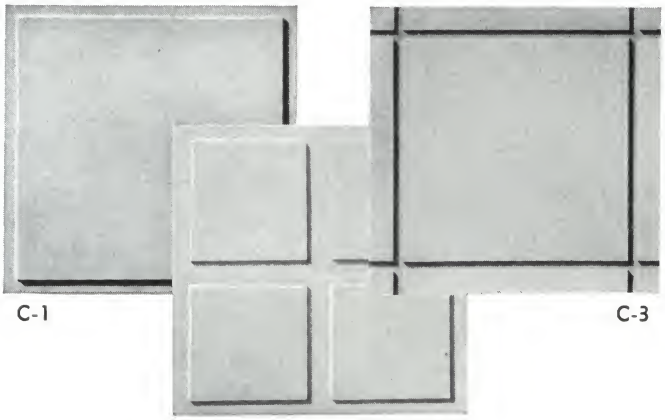
J-M Bevel Panels

J-M Bevel Panels (illustrated at right) are furnished in the following sizes: 12x12 in.; 12x24 in.; 16x16 in.; 16x32 in.; 24x24 in. and 24x48 in. (Wicker finish available only in 12x12 in.; 16x16 in. and 24x24 in.)

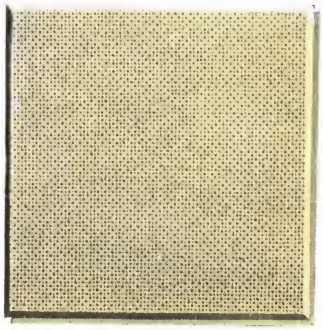
Thickness: ½ in., in all sizes.

J-M Decorative Ceiling Panels

J-M Decorative Ceiling Panels are furnished in three designs: C-1, C-2 and C-3, 16x16 in., ½ in. thick, Glaze-Coat finish. Packed 60 pieces per carton.



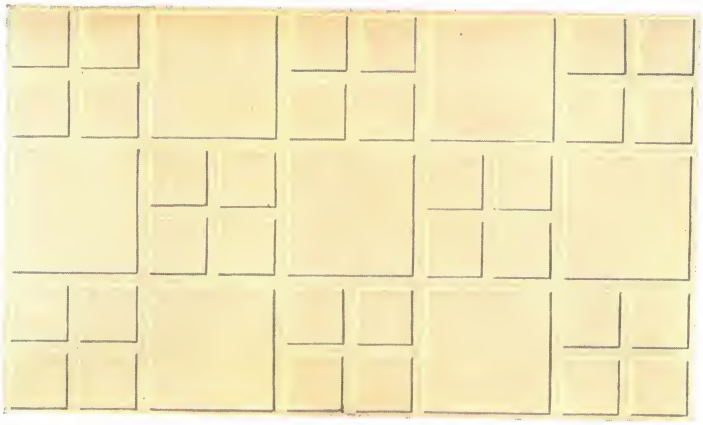
Glaze-Coat



Medium Fabric

Coarse Fabric

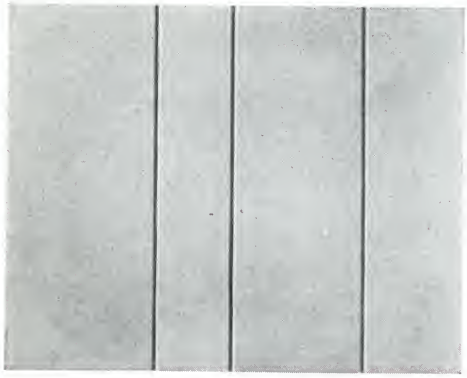
Wicker



Combination of designs C-1 and C-2

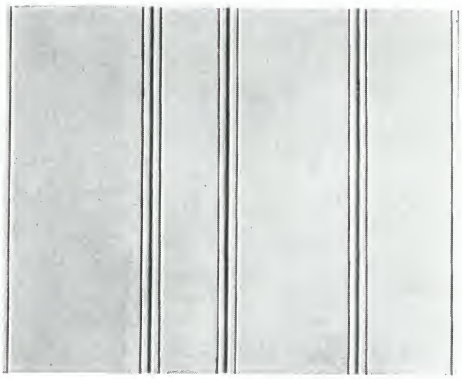
Over-all design made with C-3

Bevel and Beaded Bevel Plank



Bevel Plank

Beaded Bevel Plank



J-M Bevel and Beaded Bevel Planks are furnished in random widths of 6, 8, 10 and 12 in. x 8, 10 and 12 ft. long, ½ in. thick. Glaze-Coat finish. 8 ft. length packed 72 sq. ft. per carton; 10 ft., 90 sq. ft.; 12 ft., 108 sq. ft.

JOHNS-MANVILLE HARD BOARD AND PANLBOARD

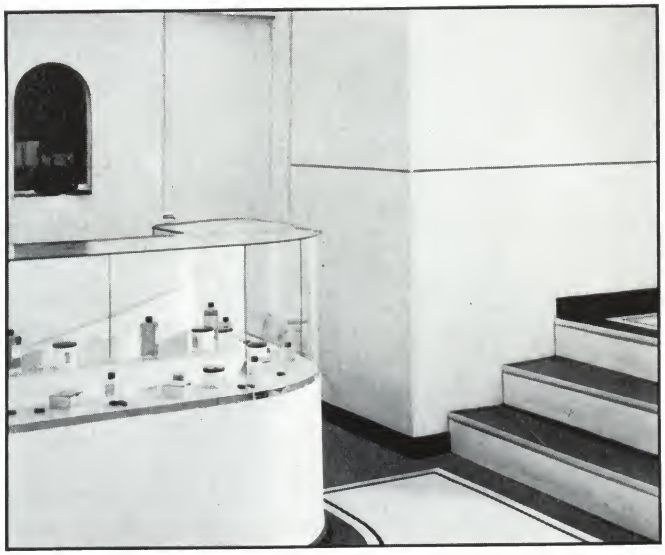
J-M Hard Board

J-M Hard Board is a grainless, knotless, all-wood fibre board, unusually strong. Its hard glossy surface is highly resistant to abrasion and wear. It will not warp, crack, split or splinter, and works easily with ordinary carpenter's tools. It has a natural, pleasing brown hue and finish which are ideal for interior decorative purposes without further treatment, although it may be painted, stained, varnished or waxed, as desired.

Tempered Hard Board is J-M Standard Hard Board impregnated with a special compound and heat-treated. The tempered board is recommended where an even harder, stronger material is desired. For fine scroll work or intricate machining, Tempered Hard Board works to even a cleaner edge than the standard material.

Hard Board was chosen for the walls of this basement room because it resists abuse and takes paint so readily

J-M Hard Board and Tempered Hard Board are furnished in 1/8 in. and 3/16 in. thicknesses, in sheets 4 ft. wide x 1, 2, 3, 4, 6, 8, 9, 10, and 12 ft. long; also in 1/4 and 5/16 in. thicknesses, in sheets 4 ft. wide x 12 ft. long. Tempered Hard Board is also available scored in 4 in. squares, in 4x12 ft. sheets, 1/8 in. thick only.



J-M Hard Board has a surface which permits a faultless painted decorative treatment

J-M Hard Board, used as wainscoting below J-M Insulating Board walls and ceiling, is not only decorative but also stands up well under service knocks

Uses—Among the practically countless uses for J-M Hard Board are the following: paneling, partitions, shelving, window displays, store counters, folding screens and table tops.

J-M Tempered Hard Board on walls and ceiling produce a luxurious harmony with the leather upholstery in this restaurant

J-M Standard and DeLuxe PanLboard

For uses where the exceptional strength and density of Hard Board are not required, Johns-Manville supplies two economical boards, known as Standard and DeLuxe PanLboard, furnished 1/4 in. thick only, 4 ft. wide x 1, 2, 3, 4, 6, 8, 9, 10 and 12 ft. long.

Standard PanLboard—A dense, tough sheet material with a hard, rich brown surface, well suited for use as a wall or ceiling finish.

DeLuxe PanLboard—Tougher and more dense than PanLboard, though not as dense as J-M Hard Board. Has a smooth, hard surface.

Both types are furnished 1/4 in. thick only, 4 ft. wide x 1, 2, 3, 4, 6, 8, 9, 10, and 12 ft. long.

Gold Bond

HANDBOOK

ON INSULATION PRODUCTS FOR THERMAL INSULATION AND SOUND CONTROL

CATALOG OF GOLD BOND

WALL AND CEILING

BUILDING MATERIALS

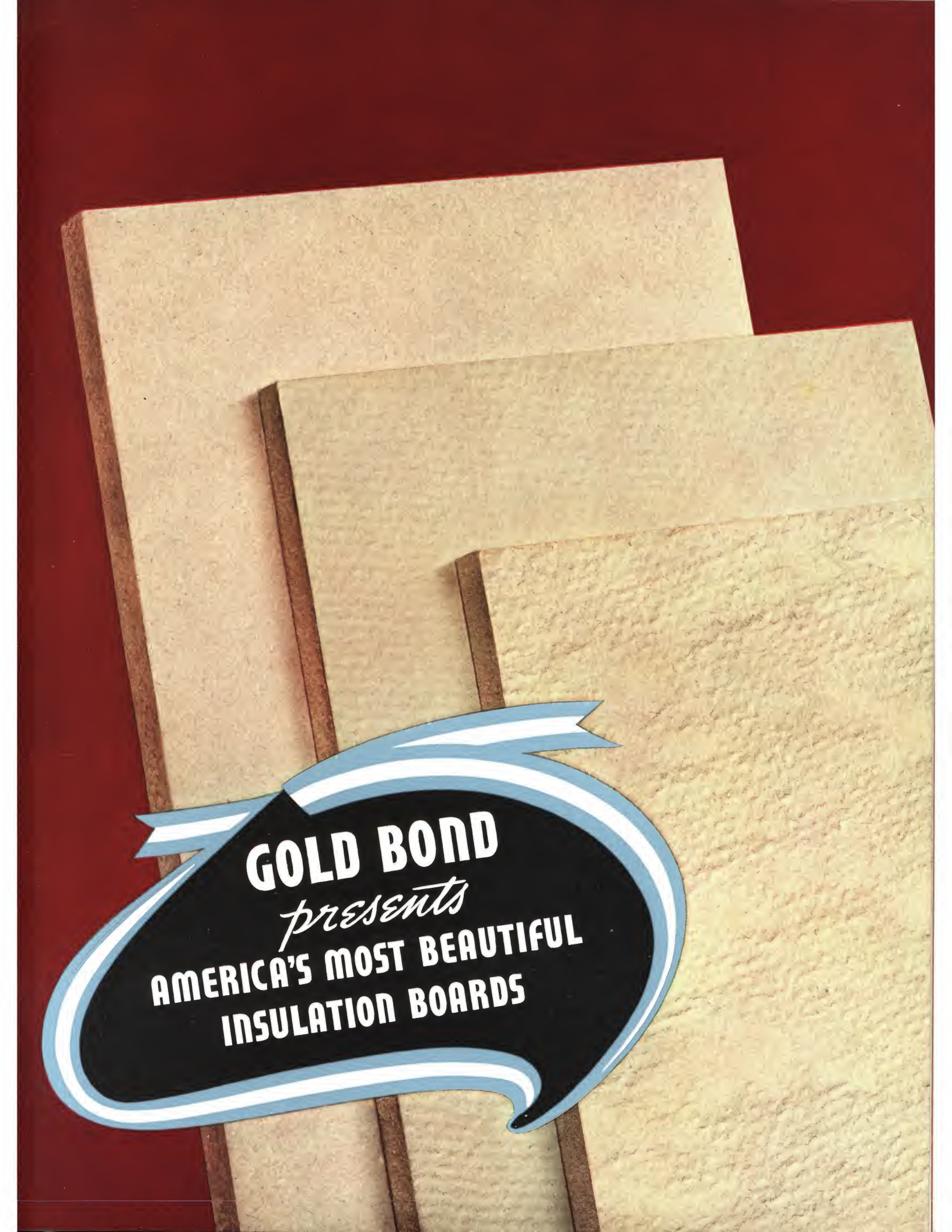
· 1939 ·

NATIONAL GYPSUM COMPANY

NEW BEAUTY FOR ALL KINDS OF INTERIORS WITH GOLD BOND INSULATION BOARD

A Modernized Restaurant, Smart and Inviting. Here, the Ceiling of Gold Bond Low Density Insulation Tile Serves a Triple Purpose . . Decorates . . Quiets Noise Like Magic . . Insulates. Owner Reports the Insulated Ceiling Cuts the Cost of Air-Cooling Almost One-Third.

A Beautiful New Home, Gold Bond Throughout. Ceilings of Textured Tile, Walls of Textured Plank in Variegated Blends. Arranged in Random Width Style. And the Owner has a Real Surprise Coming When the Heating Season Begins Because Fuel Bills Will be Cut Sharply.


GOLD BOND
presents
AMERICA'S MOST BEAUTIFUL
INSULATION BOARDS

Gold Bond SETS NEW STANDARDS

● With a few panels of Gold Bond Insulation Board, you can turn an ordinary bedroom into a stylish modern interior like this. Note that here the board is applied horizontally and grooved—a method favored by many leading designers. On the ceiling, Gold Bond Insulation Tile.

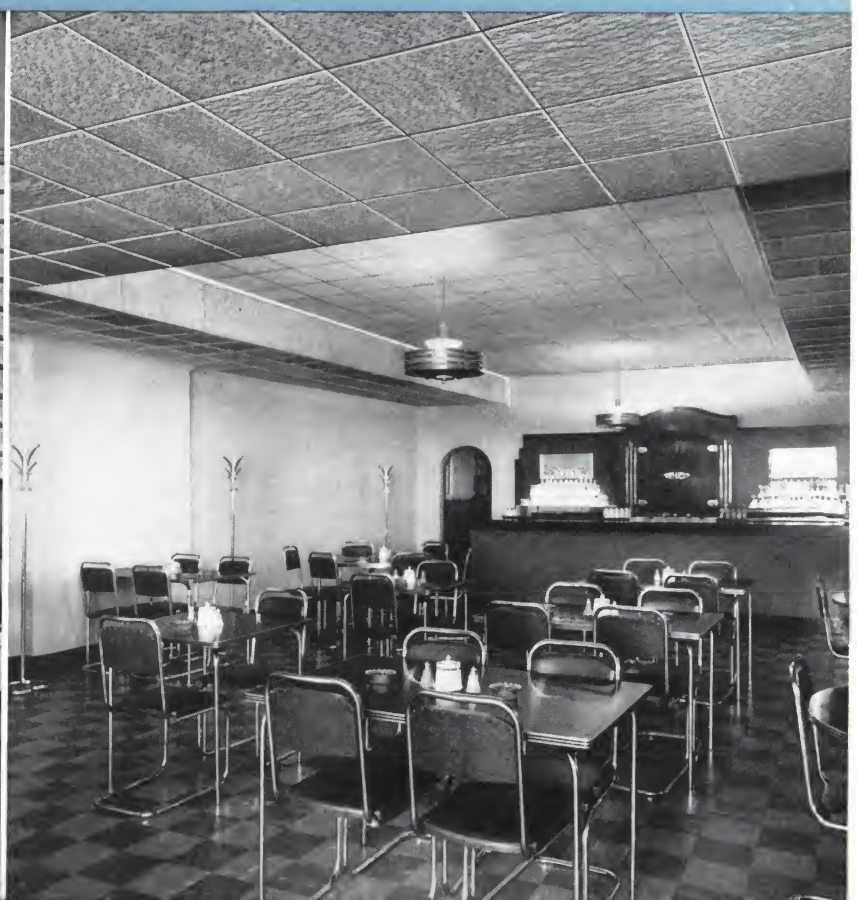
● Cheerful surroundings help put customers in the buying mood. That's why so many store owners are modernizing with colorful Gold Bond Insulation Board. Besides decorating, it quiets noise and during the summer keeps the store decidedly cooler . . . all at one low cost.

TILE ALTERNATE TEXTURE AND SANDED VARIEGATED BLENDS

Low Density TILE BRUSHED SURFACE IN TWO-TONE CREAM

● Like a room in a millionaire's penthouse apartment, but still well within the average modernizing budget. Gold Bond Insulation Tile on the walls, textured and sanded finish alternated. The tile colors are dyed in the fibre—no paint required.

● Ceilings of Gold Bond Low Density Tile hush clack and clatter like magic. Recommended for office, stores, restaurants, music rooms. On modernizing jobs, the tiles are applied right over the old material in jig time without interruption to business.



Beauty ... Strength

GOLD BOND brings you a new and basically improved insulation board . . . the most beautiful material of its kind America has ever seen.

Made by secret "Multi-Seal" process, this unique board combines the fibres of three selected "live" woods. Cottonwood for strength. Bay for formation and appearance. Pine for permanence. No makeshift or waste materials are used.

The fibres are moisture-proofed, dyed and blended to form a board with rich, permanent color throughout its entire structure . . . a board with new high resistance to expansion and warping . . . a board that brings lifelong beauty to any room.

DISTINCTIVE NEW COLORS AND SURFACE FINISHES

You can have Plank, Tile or Panel effects with three handsome surface finishes to choose from . . . Fine Mat, Texture or Sanded. In addition to standard Cream Color, Tile and Plank come in Variegated Blends of Tan, Gray, Cream, Indian Buff.

Grouping these tints in random style, harmonious color combinations are created without further cost for decoration. Special grooved designs are easy, too. This hardy board cuts as clean as a whistle.

DOES 4 JOBS AT ONE LOW COST

Here's a material that decorates as it builds and insulates against summer heat and winter cold . . . absorbs sound and cuts room-to-room noise . . . all at one low cost.

Do not fail to get *all* these wall and ceiling features when you build or remodel. Specify Gold Bond. Full description of the various boards on back page. Your dealer will gladly show you full size panels right from stock.

Unique New Insulation Board *Combines 3 'Live' Wood Fibres*

. . . Permanence

PLANK TEXTURE FINISH VARIEGATED BLENDS

PLANK SANDED FINISH VARIEGATED BLENDS

● You can put lasting life and color into any type of room with Gold Bond Insulation Plank. Here you see it in texture finish, applied random width style in variegated blends. Standard Gold Bond Insulation Board below the chair rail and on the ceiling.

● One of the best advertisements a firm can have is a good-looking, up-to-date office. This one has a ceiling of Gold Bond Insulation Tile. Walls are texture surfaced Gold Bond Insulation Board panels with edges beveled and a decorative groove six inches in from the edge.

NEW GOLD BOND INSULATION BOARDS
...a complete line made by "MULTI-SEAL" process

STANDARD BOARD

Builds, decorates, insulates and deadens noise, all at one low cost. And does each job better due to the use of "live" wood fibres combined by Gold Bond's exclusive "Multi-Seal" Process. Choice of three standard surface finishes: Fine Mat, Sanded and Texture . . . all in Cream Color. Square edges . . . Thicknesses: ½", 1", 1½", 2" . . . Sizes: 4' x 4', 5', 6', 7', 8', 8½', 9', 9½', 10, 12, 14', 16'.

TILE

Smart new wall and ceiling effects are easy to obtain with Gold Bond Insulation Tile. Can either be nailed in place or applied with Gold Bond Adhesive. Half-inch Tile is furnished in Fine Mat, Texture or Sanded Finish in Cream Color; and either Texture or Sanded Finish in Variegated Blends of Cream, Tan, Indian Buff and Gray. One-inch thickness in Fine Mat Finish, Cream Color only. Sizes: 12" x 12", 16" x 16", 12" x 24", 24" x 24", 16" x 32", 18" x 48", 24" x 48". V-Lap edges on all sides, and beveled.

LOW DENSITY TILE. Here—at no extra cost—is a half-inch, low density, insulation tile with greater sound absorption than standard tile. Light in weight, porous, yet strong and wear-resisting. Brushed surface in two-tone Cream with butt edges and beveled four sides. Same sizes as standard tile . . . ½" thickness only.

ACOUSTICAL TILE. Full one inch thick, very porous and excels in providing both insulation and noise reduction. Distinctive brushed surface with deep recessions. Two-tone Cream Color, butt edges and beveled four sides. Quickly installed with nails or Gold Bond Adhesive . . . sizes: 12" x 12", 16" x 16" . . . 1" thickness only.

PLANK

Same beautiful surface finishes as Gold Bond Insulation Tile. Cream and Variegated Blends. Long sides have beveled V-Lap edges; ends square. Available with or without decorative bead. Widths: 6", 8", 10", 12", 16". Lengths: 8', 9', 10', 12'. . . ½" thick.

INSULATION LATH

Insulate as you build with this new, improved plaster base. Keeps your house more uniformly warm in winter, at lower fuel expense . . . and many degrees cooler in summer. The sturdy 18" x 48" panels are applied quicker than wood lath . . . add greater strength to the walls and ceilings. Interlocking edges beveled to insure extra plaster thickness at all joints. Made in ½", ¾" or 1" thickness. Supplied with metal reinforcing at no extra cost.

EXTERIOR SHEATHING

At no greater cost than old style wood sheathing, this rugged new board provides maximum insulation . . . plus tremendous bracing strength. Made from insulating wood fibres waterproofed by "Multi-Seal" process. Coated with asphalt on one surface and all edges for still further moisture protection. Then painted aluminum all over, to insulate by reflection against radiant heat. Because the panels are large there are fewer joints. And no knotholes to permit infiltration of hot or cold air. Sizes in 25/32" thickness: 4' x 7', 8', 8½', 9', 9½', 10', 12'.

ROOF BOARD

Since heat rises, roof insulation is mighty important from a fuel standpoint. So build with Gold Bond Roof Board. It saves its own cost in a short time, then pays dividends for the life of the building. Supplied in 22" x 47" panels ½" thick with square edges. Thicknesses of 1", 1½", and 2" come with either square edges or offset.

COLD STORAGE BOARD. Gold Bond makes Cold Storage Board in a full range of standard sizes and thicknesses. Ask your dealer for details.

ACCESSORIES

Full line of mouldings made of Gold Bond Insulation Board (Sanded Finish) including Decorative Strips, Corner Moulds, Frieze Bands and Ornaments . . . also Gold Bond Adhesive a special cement which bonds instantly.

NATIONAL GYPSUM COMPANY, BUFFALO, N. Y.

DISTRICT OFFICES: NEW YORK CHICAGO BOSTON PHILADELPHIA MINNEAPOLIS ATLANTA DALLAS ST. LOUIS

GOLD BOND FIBRE INSULATION LATH

Does Three Jobs . . . Builds a Stronger Plaster Base
Provides Effective Insulation . . . Cuts Room-to-Room Noise
Supplied with or without Metal Reinforced Edge

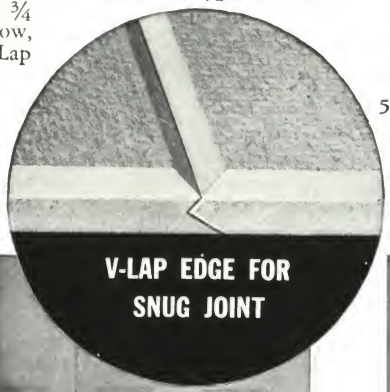
BUILDING a new house these days without insulation is like designing a new car with two wheel brakes. It's years behind the times.

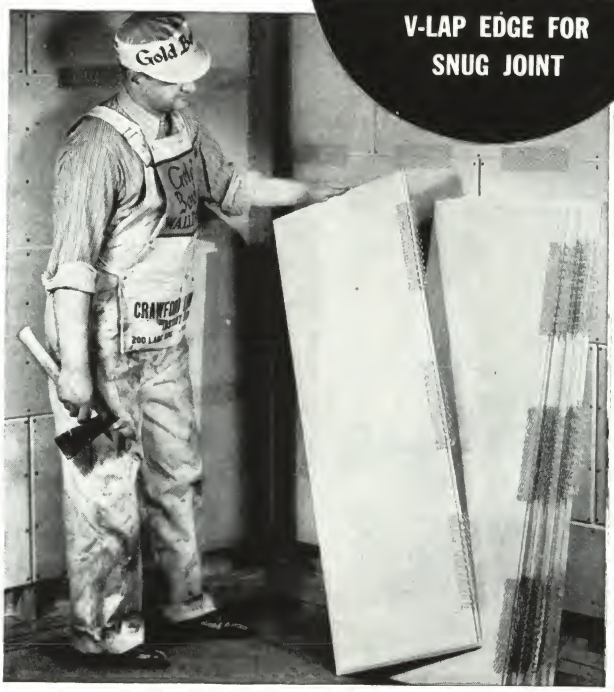
Today, prospective buyers of new homes demand insulation and for very good reasons. An insulated home means greater comfort the year 'round. Rooms are 10 to 15 degrees cooler in summer, easier to heat in winter with fuel bills cut as much as 40%. Insulation is not a luxury. It's real economy because it pays for itself many times over. And it steps up the value of the property so that it will always bring a higher resale price.

Gold Bond Fibre Insulation Lath does a thorough job of insulating. Made of the same selected wood fibre as Gold Bond Insulation Board, fabricated into sturdy panels by exclusive "Multi-Seal" Process for greater strength and resistance to moisture. It's easy to appreciate how much quicker these 18 x 48 in. panels of Gold Bond Insulation are applied than old-fashioned narrow strips of wood lath. And here's another saving . . . *all* plaster goes on the surface of the lath. None is wasted *between* the lath to form "keys" as with wood lath.

Size and Thicknesses

Gold Bond Fibre Insulation Lath is made in one size, 18 in. x 48 in. In addition to the standard thickness of ½ in., is also made in special thicknesses of ¾ in. and 1 in. As illustrated below, all panels have special V-Lap edge on long sides for snug fit . . . . and beveled edges all around which insure extra plaster thickness over all joints. Supplied with or without metal reinforced edge.





The metal reinforcing is uniformly spaced so as not to "hit" on studs or interfere with nailing or cutting. V-Lap edge on long sides and beveled all around for extra plaster thickness.

Specifications

1. **Scope of Work**
   List areas to be covered. (If standard ½ in. Gold Bond Insulation Lath is to be used for all partitions and ¾ in. or 1 in. thickness for exterior walls, list specifically the areas where each thickness is to be used.)
2. **Framing**
   Space studs, joists or furring strips 16 in. (or 12 in.) on centers. Where necessary, use extra 2 x 4 in. headers.
3. **Material**
   Lath shall be standard Gold Bond Fibre Insulation Lath (or with Metal Reinforced Edge) as manufactured by National Gypsum Company and delivered to job in original wrapped bundles. Panels shall be 18 in. x 48 in. x ½ in. thick (or ¾ in. or 1 in. thick as specified above).
4. **Application**
   4-1. General. Do not wet lath either before or after application. Apply panels at right angles to framing members with beveled edges exposed. The groove edge of panels shall be down . . . with V-Lap edges fitted moderately close together and ends spaced ¼ in. apart. All end joints shall butt over framing members. Stagger vertical joints on walls . . . stagger joints where walls and ceiling meet . . . stagger horizontal joints at corners. (If lath with metal reinforced edge is used, the metal strips require no nails.)
   4-2. Nailing. Use 1⅛ in. blued lath nails with $\frac{5}{16}$ in. head for ½ in. lath. Use 1¾ in. blued lath nails with $\frac{5}{16}$ in. head for ¾ in. or 1 in. lath. . . . 16 nails to each 18 x 48 in panel . . . four nails to each stud. Space nails 5½ in. apart and ⅜ in. in from bevel edge. Do intermediate nailing first, then edges.
   4-3. Corner Treatment. Reinforce all internal corners with Gold Bond 3 in. Cornerite including corners where walls and ceilings meet. Reinforce all exterior corners with Gold Bond Corner Bead (specify type).
5. **Plastering**
   5-1. Base Plaster. Gold Bond Hair Fibred Gypsum Plaster (or Gold Bond Wood Fibred Gypsum Plaster) shall be used.
   5-2. Application. Apply plaster in three coats in accordance with manufacturer's instructions. It is of utmost importance that plaster be applied full ½ in. thick. To insure uniform thickness, screeds shall be used, particularly on large areas.

Plastering moves along faster over this smooth base. The metal reinforcing becomes imbedded in the plaster which provides extra strength over continuous joints and incidentally insures a uniformly thick plaster coat.

NATIONAL GYPSUM COMPANY

GOLD BOND FIBRE INSULATION SHEATHING

"Weather-Conditions" New Homes Against Heat, Cold, Moisture . . . Adds Tremendous Bracing Strength to Framing

MODERN standards of comfort demand a "weather-conditioned" house. A house that's cooler in summer, easier to heat in winter. A house more healthful to live in . . . with outside walls so tight and weatherproof that dampness can't seep through.

Insulation Sheathing provides this valuable extra protection at no higher cost than ordinary wood sheathing. It's just like getting insulation free!

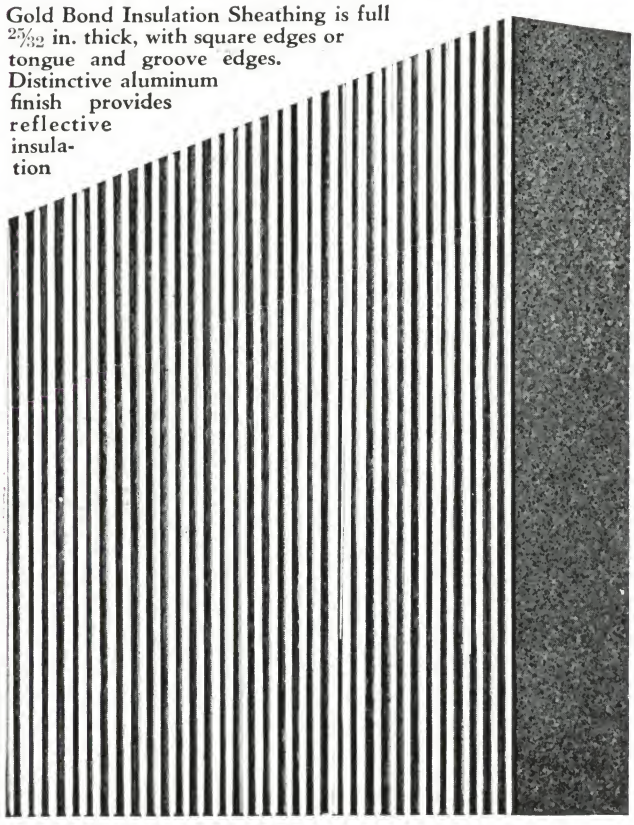
The Newest in Insulation Sheathing

Any Insulation Sheathing is a big improvement over wood sheathing but now . . . Gold Bond presents a new sheathing with *two* kinds of insulation:

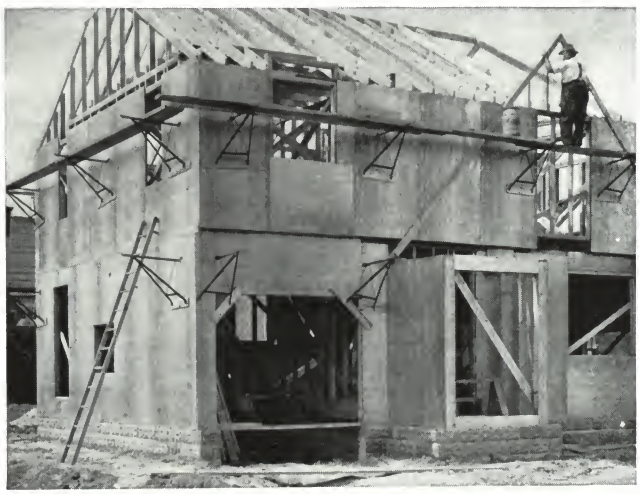
(1) Insulation against conducted heat, made possible by millions of tiny air cells within the board. (Like a wool overcoat preventing escape of body heat.)

(2) Reflective insulation to retard radiant heat. (Like the shiny inner walls of a thermos bottle.) Gold Bond accomplishes this with a generous coat of aluminum paint over the entire board.

With both these kinds of insulation you will find it far easier and less costly to keep your house at a warm, even temperature all winter long. And you'll get a real thrill out of cooler, more comfortable rooms no matter how hot it gets in summer.



Gold Bond Insulation Sheathing is full 25/32 in. thick, with square edges or tongue and groove edges. Distinctive aluminum finish provides reflective insulation



The large sturdy panels of Gold Bond Sheathing are applied in less time and add structural strength to the building besides providing the most important improvement that can be built into new homes . . . Insulation.

Made of Sturdy Wood Fibre

Three "live" Southern Woods are used exclusively in the manufacture of Gold Bond Insulation Sheathing . . . Cottonwood for strength, Bay for formation, Pine for permanence. No deadwood, no waste materials are used. The fibres of all three woods are skillfully blended by Gold Bond's "Multi-Seal" process and fabricated into large sturdy panels with outstanding strength and insulation value. A heavy coating of asphalt "under the aluminum finish" provides additional protection against moisture.

Greater Structural Strength

Actual tests prove conclusively that Gold Bond Insulation Sheathing adds greater bracing strength to the structure than wood sheathing applied either horizontally or diagonally. The large panels save time in application and provide better wind stoppage because there are fewer joints. And no knot holes to permit infiltration of hot or cold air.

Sizes and Thicknesses

Gold Bond Fibre Insulation Sheathing is full 25/32 in. thick and supplied in two styles as follows:

Styles	Sizes	Wrapped
Square Edges on four sides	4 ft. x 7, 8, 8½, 9, 10, 12 ft.	4 panels per bdle.
T. & G. edges long sides. Ends square	One size, 2 ft. x 8 ft.	7 panels per bdle.

GOLD BOND INSULATION ROOF BOARDS

Gold Bond Insulation Roof Boards are also made from rugged "Multi-Seal" processed wood fibre and supplied in 22 x 47 in. panels ½ in. thick with square edges. Thicknesses of 1, 1½ and 2 in. are made with either square edges or offset.

GOLD BOND SHEATHING PROVIDES THE GREATEST IMPROVEMENT THAT CAN BE BUILT INTO NEW HOMES . . . *Insulation for the life of the building*

Specifications

Scope of Work

Gold Bond Insulation Sheathing shall be used in the following locations: (list)

Framing

Framing shall be spaced 16 inches on centers.

Material

1. Sheathing shall be as manufactured by National Gypsum Company and delivered on the job in original wrapping. Boards shall be $\frac{25}{32}$ inch thick and selected from these sizes: 4 feet by 7, 8, 8½, 9, 9½, 10 or 12 feet with Square Edges, or 2 ft. x 8 ft. with T. and G. Edges.
2. Common 8d nails shall be used.

Application

1. All exterior walls as specified shall be covered with Gold Bond Insulation Sheathing.

2. Panels (4 ft. wide with square edges) shall be applied vertically with ribbed surface facing studs . . . Panels (2 ft. wide with T. and G. edges) shall be applied at right angles to studding with groove side down and ribbed surface facing studs.

3. Panels shall be nailed to intermediate studs first, with nails spaced 6 inches apart on centers, then along edges 3 inches apart and not less than ⅜ inch in from edge.

4. All joints shall center on framing members. Where necessary, headers shall be cut between framing members to provide a nailing base for all edges of sheathing panels.

5. Square Edge panels shall be spaced ⅛ inch apart at intersections, but brought into close contact with door and window frames . . . T. and G. Edge panels shall be fitted moderately close together with groove edge down. Ends spaced ⅛ inch apart.

6. Boards shall cover completely from sills to plates.

Supplementary Provisions

Note: No building paper required except under exterior stucco.

1. WOOD SIDING—All joints shall center over framing members, and nails shall be long enough to pass through the sheathing and penetrate the stud at least 1 inch.

2. SHINGLES—Furring strips of 1 by 2-inch size shall be applied at right angles to framing members, over the Gold Bond Insulation Sheathing. Nails shall be long enough to penetrate at least 1 inch into framing.

3. METAL WORK—A 1-inch thick wood nailing base shall be applied over sheathing wherever metal gutter aprons, valleys, hips, ridges, saddles, etc., are to be placed.

4. EXTERIOR STUCCO—All head casings over windows and doors shall be flashed with metal. Sheathing shall be covered completely with waterproof building paper. Self-furring stucco bases, such as expanded metal lath, shall be applied directly over sheathing and building paper, so that nails or staples shall penetrate framing at least one inch. Non-furring stucco bases shall be nailed to 1 by 2-inch wood furring strips applied vertically to each stud over the sheathing and building paper.

5. MASONRY VENEER—Metal ties for masonry veneer shall be attached over sheathing with nails that penetrate framing members 1 inch or more. At least ½ inch space shall be left between sheathing and back of veneer.

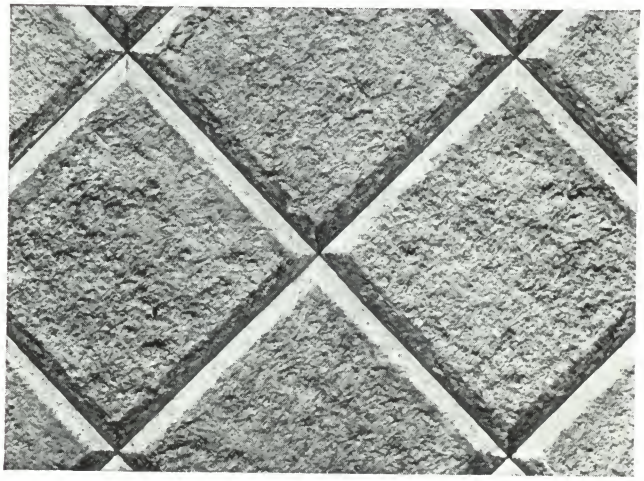
Here's a real weather-tight sheathing with maximum insulation. No cracks, no knotholes, no random lengths, no waste.

NATIONAL GYPSUM COMPANY

GOLD BOND *LOW DENSITY* INSULATION TILE

A Beautiful Fibre Insulation Tile with Greater Sound Absorption Than Standard Insulation Tile . . . at No Higher Cost. Full ½ in. Thick

A Three-in-one Product . . . Decorates . . . Quiets Noise . . . Insulates



At small cost, ugly, old style ceilings can be quickly covered with this beautiful noise quieting tile. Seven sizes which permit an endless number of patterns. Light reflection of over .60.

HERE . . . at no extra cost . . . is a special ½ inch tile with greater insulation and noise absorption than standard insulation tile of the same thickness. These plus advantages are brought about through a special fabrication process which produces a tile that's exceptionally porous, yet rigid and tough.

Gold Bond Low Density Tile is used for ceilings and upper wall panels in lobbies, grill-rooms, offices, corridors; in fact, any type of room where noise quieting is needed. Besides hushing sound, this three-in-one material decorates and insulates.

Easily Installed . . . Requires No Decoration

Gold Bond Low Density Tile is quickly applied with nails or Gold Bond Adhesive, generally right over the old material. The attractive brushed surface in neutral light cream color requires no further decoration. However, if special colors are desired the surface may be spray painted with Gold Bond Casein paint or Sunflex with little or no sacrifice of sound absorption.

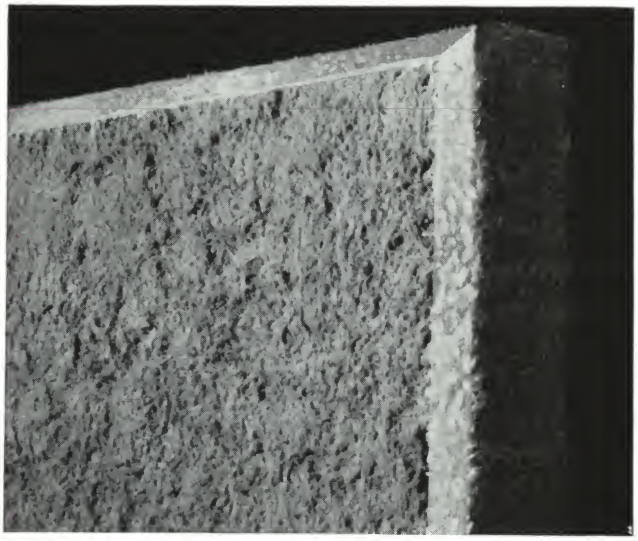
Full Range of Sizes

Made ½ in. thick in the following sizes: 12 x 12, 12 x 24, 16 x 16, 24 x 24, 16 x 32, 18 x 48, 24 x 48 in. Brushed surface, cream color and beveled four sides with butt edges.

GOLD BOND FIBRE ACOUSTICAL TILE

For Sound Control at Moderate Cost, Plus Decoration and Insulation Sound Absorption of .73 at a Frequency of 512 Cycles . . . Full 1 in. Thick

GOLD Bond Fibre Acoustical Tile excels in sound absorption besides providing permanent insulation and decoration. Made by special fabrication process, it has far greater porosity than standard insulation tile. Actually, it is a mass of inter-communicating sound chambers which quiet noise like magic. For use either as a sound absorbtive material in hospitals, corridors, etc., or as an acoustical corrective for theaters, churches, auditoriums, etc.



Ceilings of this distinctive looking tile have the same noise quieting effect as carpeting on the floor. Full 1 inch thick with beveled edges all around. Light reflection of .58.

High Sound Absorption

The following official ratings are per authority of the Acoustical Materials Association.

Gold Bond Fibre Acoustical Tile

Thickness	Sound Absorption Coefficients					Noise Reduction Coefficient
	128	256	512	1024	2048	
1 in.	.26	.39	.73	.84	.80	.70

NOTE: The surface of this sample was painted by manufacturer.

No Further Decoration Needed

The attractive two-tone cream color of Gold Bond Fibre Acoustical Tile requires no further decoration except where special color schemes are desired. In that case, Gold Bond Casein paint or Sunflex should be used for decorating as these non-bridging casein paints will not seal the surface like oil paint. Painting doesn't change the sound absorption to any appreciable extent, in fact the above coefficients apply on material decorated with one coat of paint.

Color, Thickness, Sizes

Full 1 in. thick, with beautiful brushed surface in two-tone cream color. Butt edges and beveled on all sides. Made in two sizes: 12 x 12 and 16 x 16 in.

Easy Installation

Gold Bond Fibre Acoustical Tile is quickly applied with nails or Gold Bond Adhesive. For new work either furring strips or a solid backing is needed. On modernizing jobs, is generally applied directly over the old material.

GOLD BOND ACOUSTEX

The Highest Quality Acoustical Tile Made by National Gypsum Company For Sound Control and Noise Quieting Fire-Retardant . . . Distinctive, Textured Surface . . . Seven Colors

THE Gold Bond line of materials for sound control comprises both acoustical plaster and acoustical tile. In the latter class, Gold Bond Acoustex ranks highest.

Here is a product with high sound absorption, in a variety of thicknesses, capable of controlling noise reverberations to the split second; proved by thousands of successful installations in theaters, office buildings, radio studios, churches, hospitals, restaurants. A tile that is fire-retardant, beautiful in appearance and permanent; with an established prestige among acoustical engineers and architects. For two distinct purposes, acoustical correction and noise quieting, Acoustex is outstanding.

Description

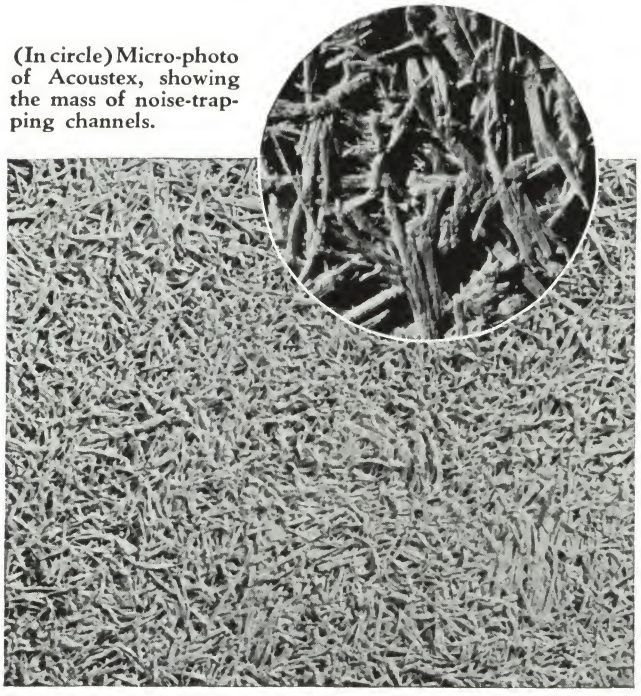
Acoustex is fabricated from selected wood that is shredded, then toughened by a hard-setting cement binder for extreme strength and durability. Retards fire effectively, is sanitary, easily cleaned. Impervious to mould growth and decay. Can be sawed like wood and is non-brittle—not likely to be broken in handling.

Colors

Supplied in Light Buff, Medium Buff, Dark Buff, Light Grey, Apple Green, White. Also, natural straw color to be left as is or spray painted on the job with Gold Bond Casein Paint, Sunflex or other non-bridging paints. Acoustex may be redecorated any number of times with no appreciable loss of sound absorption. A smart, cheerful-looking material with high light reflection.

Easy Application

Acoustex is quickly applied with nails or cement, or in the case of suspended ceilings, the Gold Bond Acoustical Suspension System is employed. For modernizing, is generally put up directly over the old material. Many remodeling jobs are done over night without interruption to business—a real "break" for theaters, stores and other places where tie-ups cost money.



(In circle) Micro-photo of Acoustex, showing the mass of noise-trapping channels.

Acoustex hushes sound within the room and also quiets outside street noises that enter through open windows or doors.

High Sound Absorption

The following ratings are per authority of the Acoustical Materials Association.

Thickness	Mounting (Described Below)	Sound Absorption Coefficients					*Noise Reduction Coefficient
		128	256	512	1024	2048	
5/8"	1	.14	.21	.42	.78	.85	.55
5/8"	2	.22	.23	.57	.87	.72	.60
3/4"	1	.16	.27	.50	.88	.80	.60
3/4"	2	.22	.30	.70	.92	.79	.70
3/4"	6	.55	.70	.84	.75	.80	.75
7/8"	1	.24	.29	.60	.95	.83	.65
7/8"	2	.24	.40	.82	.90	.72	.70
1"	1	.23	.28	.63	.95	.81	.65
1 1/8"	1	.24	.33	.74	.96	.80	.70
1 1/8"	2	.30	.43	.88	.91	.80	.75

Types of Mounting

1. Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
2. Nailed to 1" x 2" wood furring 12" o.c. unless otherwise indicated.
6. Nailed to 2" x 4" wood furring 24" o.c.

NOTE: The surface of all samples tested was painted by manufacturer.

Sizes and Thicknesses

STANDARD ACOUSTEX

TILE SIZES			PLANK SIZES
6 x 12 in.	12 x 12 in.	6 x 24 in.	Widths: 6, 12, 24 in.
24 x 24 in.	12 x 18 in.	18 x 18 in.	Lengths: 30 to 96 in. in 6 in. increments.
	12 x 24 in.		

Thicknesses: 5/8, 3/4, 7/8, 1, 1 1/8 in.

ACOUSTEX For Suspended Ceilings (Specially Grooved)

TILE SIZE	PLANK SIZES
24 x 24 in.	Width: 24 in.
	Lengths: 30 to 96 in. in. 6 in. increments

Thicknesses: 1 in. and 1 1/8 in.

GOLD BOND TROWEL FINISH MACOUSTIC

Fireproof Acoustical Plaster for Acoustical Correction and Noise Reduction . . . Sound Absorption of .50 at Frequency of 512 Cycles Applied 1/2 Inch Thick . . . Supplied in White and Factory-Mixed Tints

GOLD BOND TROWEL FINISH MACOUSTIC is a fireproof acoustical plaster of unusually high sound absorption. Recommended for all types of new buildings where acoustical correction is advantageous such as theatres, auditoriums, churches, radio studios, etc. In buildings of this kind, Trowel Finish Macoustic is used to reduce reverberations and make hearing conditions ideal.

Macoustic also excels as a sound absorptive material for use in hospitals, corridors, schoolrooms, libraries, swimming pools and restaurants—the objective in these cases being to subdue noise as much as possible.

Macoustic is simply mixed with water and applied full ½ in. thick over a base of gypsum plaster, lime plaster, or portland cement. No special tools are required nor specially trained applicators. A regular steel trowel is used and any plasterer can do the work.

Fireproof, Sanitary, Permanent

Trowel Finish Macoustic, a mineral product, is fireproof, vermin proof and absolutely permanent. Because of the nature of the buildings in which acoustical material is generally used, namely hospitals, theatres, etc., the fireproof and sanitary qualities of the material are of vital importance. In selecting an acoustical material, consideration should be given to these qualifications as well as sound absorption and permanency.

Sound Absorption

The following ratings appear in Bulletin No. 5 issued by the Acoustical Material Association. They cover official tests of material applied under conditions simulating actual job conditions. Tests were conducted by Paul E. Sabine, Riverbank Laboratories, Geneva, Ill.

Sound Absorption Coefficients

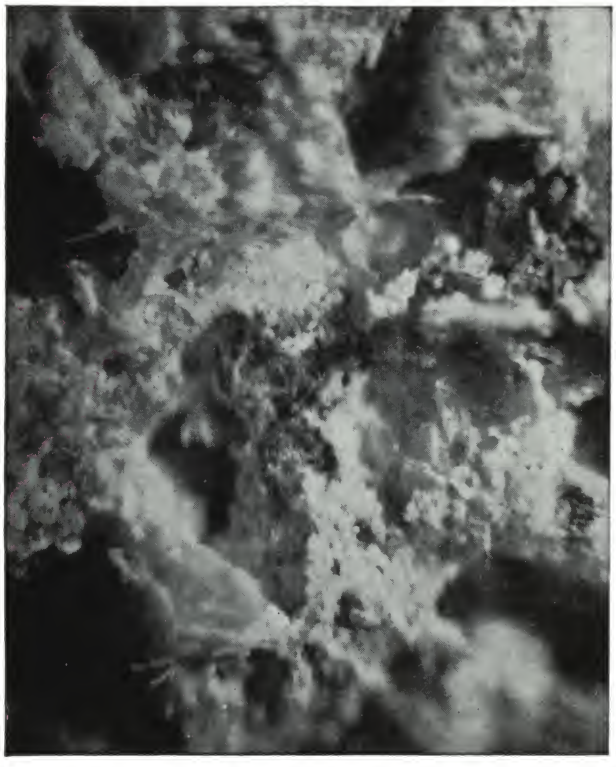
Material	Thickness	Frequency				
		128	256	512	1024	2048
Trowel Finish Macoustic	½ inch	.30	.28	.50	.79	.54

Noise Reduction Coefficient .55.

Federal Jobs—Gold Bond Trowel Finish Macoustic Plaster ½ in. thick meets Federal Specifications for Plaster; Acoustic SS-P-391 at the following classifications: Class I for Auditorium Treatment . . . Class T for Noise Reduction.

Colors

Color No. 1 White (Natural Color)
Color No. 5 Ivory
Color No. 10 Cream
Color No. 15 Buff



(above) The surface of Trowel Finish Macoustic, full size. Under a magnifying glass this surface appears as a mass of tiny ducts which permit the entrance of sound.

(left) Microphoto of internal cross-section of applied Trowel Finish Macoustic, magnified 32 times. This labyrinth of intercommunicating sound channels is created by the automatic bursting of millions of entrapped gas bubbles, while drying.

Special Decoration and Cleaning

Where specifications call for special colors, Macoustic in white or ivory may be used and decorated (after application) with Gold Bond Casein Paint, Sunflex or other non-bridging paints, brushed or sprayed on (the latter is preferable). Oil paints should not be used as they will seal the surface and reduce the sound absorption.

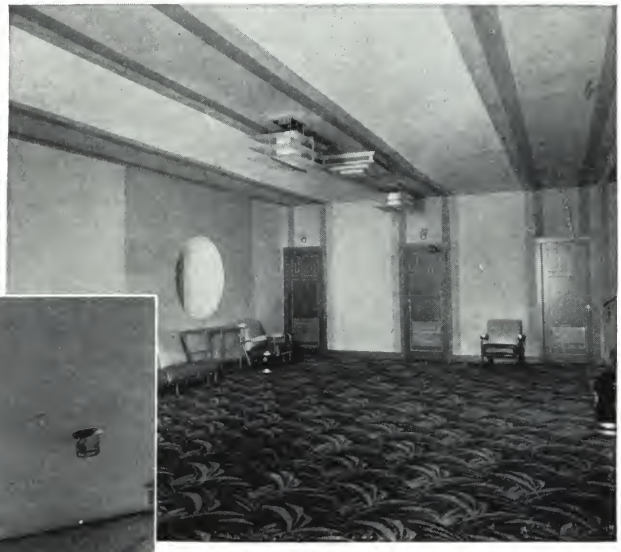
Macoustic may be cleaned by going over the surface with a hand vacuum cleaner. Or a cloth, dampened with a mild solution of Ivory soap and water, may be used. If the surface gets real dirty, it is generally more economical and quicker to redecorate as the cost of spraying with one coat of paint is very moderate.

Swimming Pools

Trowel Finish Macoustic may be used in swimming pools and similar places where the material will be subjected to almost constant high humidity but must be applied over a portland cement base.

Have Sample OK'd Before Starting Job

To acquaint plasterers on the job with the ease and simplicity with which Trowel Finish Macoustic is applied and the manner of finishing the surface, it is recommended that a few shovelfuls of the material be mixed and applied to some convenient wall space before starting the job. Have the architect approve this sample as standard for the job.



(above) Smoking Room in Theatre. Note how effectively the Macoustic ceiling fits in with the wall treatment. Its fireproof quality makes it especially suitable for use in theatres, auditoriums and schools.

(left) This Macoustic ceiling serves a double purpose. When the auditorium is used for assemblies, Macoustic reduces reverberations and makes hearing conditions ideal. When used as a gym, noise is effectively hushed.

Specifications for Gold Bond Trowel Finish Macoustic

Specifications

1-1. Scope—Areas, as specified on plans, shall be covered with Gold Bond Trowel Finish Macoustic (state color number).

1-2. Material—Acoustical plaster shall be Gold Bond Trowel Finish Macoustic Color Number (state number) as manufactured by National Gypsum Company, Buffalo, N. Y. All Macoustic shall be delivered to the job in its original containers and nothing shall be added but clean water.

1-3. Thickness—Macoustic shall be full ½ in. thick; applied in two ¼-in. coats.

1-4. Mixing and Applying—Macoustic shall be mixed and applied strictly in accordance with instructions supplied by the manufacturer.

Mixing

Trowel Finish Macoustic, as delivered in bags, is ready for mixing with clean water. Nothing else may be added on the job. A slight excess of water is recommended during the soaking process and the mixture should be allowed to stand for an hour before using. Then, add enough dry material to bring the mass to a stiff working consistency. May be retempered if necessary. Overnight soaking is not recommended. A mechanical mixer, if available, is recommended. Give the mixture a brisk hoeing just before hodding.

Application

Trowel Finish Macoustic may be applied over a base of gypsum plaster, lime plaster, or portland cement—the base to be done dry and well scratched. Apply in two coats. The base (scratch) coat should be ¼ in. thick, applied with a steel trowel *and left as it comes from the trowel.* Allow this first coat to stand overnight.

Next, apply a second ¼ in. coat of the same mix and *bring to a true surface with as little troweling as possible.* Allow to take up until free water has disappeared. Then drag trowel over the surface to eliminate trowel marks and to open up surface.

Swimming Pools—Trowel Finish Macoustic may be applied in swimming pools or similar buildings where it will be subjected to almost constant high humidity but must be applied over a base of portland cement rather than gypsum plaster. (Recommended base is composed of equal parts of portland cement and finish lime with two parts of sand.)

Joinings—Joinings or lap marks should be avoided wherever possible by finishing one complete unit or panel at a time.

Drying—Trowel Finish Macoustic is a slow drying material, requiring at least 10 days to dry thoroughly, depending upon temperature and drying conditions. It becomes progressively harder and stronger for a period of months after application.

GOLD BOND GYPSUM WALLBOARD AND LATH WITH ALUMINUM FOIL INSULATION

Combines Reflective Insulation with Fireproof Gypsum Wallboard and Lath, Providing Maximum Home Insulation at a Fraction of the Normal Cost

SCIENTISTS have recently discovered the practical application of the principle that *heat waves, like light waves, are reflected by a polished metal surface.* So effective is this new type of insulation, that already it has been adopted by the United States Navy, leading railroads, and manufacturers of refrigeration equipment. Many foremost architects and building experts stand ready to vouch for its superiority over previous types of insulation.

Increased Year-Round Comfort

During severe hot weather, aluminum foil insulation has proved its ability to keep inside temperatures 10 to 20 degrees or more below outside. While during the average heating season it may be counted upon to save from $40 to $100 in fuel bills for the owner of the average size house. Yet aluminum foil insulation costs considerably less than other types.

One of its most striking features to the man accustomed to the weight and bulk of ordinary insulating materials, is the almost total absence of weight in aluminum foil. For instance, on the U. S. S. New Orleans less than 2000 pounds of aluminum foil was used instead of more than 100,000 pounds of bulky insulation. The ocean liners Rex and Comte di Savoi carry only 1/60th the normal insulating weight because of aluminum foil. While new streamlined, air-conditioned trains, refrigerator cars and trucks are insulated more effectively and permanently, with a welcome saving in space and weight, through aluminum foil.

A Combined Plaster Base and Insulation

Gold Bond Aluminum Foil Insulation Lath is standard Gold Bond Gypsum Lath, on one side of which is laminated a mirror-like sheet of pure polished aluminum. Insulation and plaster base are combined into a thoroughly practical, fireproof, easily erected product. This double purpose lath costs but little more than ordinary gypsum lath. An additional saving is made in application where the only operation is nailing up the lath.

Gold Bond Aluminum Foil Insulation Board is sturdy, fireproof gypsum board with foil firmly laminated on one side. A finer wallboard that won't warp, expand or contract and with high insulation value.

Insulation Values

Numerous tests have shown the remarkable effectiveness of this new type of insulation. It is based on the principle that a polished metal surface—in this case polished aluminum selected because of its ability to withstand corrosion—will reflect 95% of all radiant heat. It blocks heat entry in summer—stops heat loss in winter.

Mirrored Surface Reflects Heat Waves

A combined plaster base and insulating lath, erected in one operation at a considerable saving. Approximately 21% more efficient than fibre insulating board under like conditions.

At this point it is well to remember that the only active agent involved in insulation is *heat energy.* As heat energy, like water, always seeks a level or balance, heat energy is passed from the warmer to the colder body.

In Summer, heat energy from outside passes into the cooler interior of the house. The amount of heat flow of course, depending upon degree of insulation. In Winter, the warmer furnace heat inside the house passes outward to the colder air. Here again heat loss depends upon amount of insulation.

Approximately 75% of all heat traveling through walls and ceilings of buildings is radiant heat, or heat waves. This is distinguished from convected heat, or moving hot air, and conducted heat, or heat energy moving along a solid or liquid body.

It is the passage in or out of this radiant heat which is 95% stopped by Gold Bond Aluminum Foil Lath and Wallboard.

Comparative tests on Aluminum Foil Board and Lath show this material to be approximately 21% more effective than fibre insulating board when employed in identical wall construction.

"Plus Values" of Gold Bond Aluminum Foil Insulation Lath and Wallboard

Chart Showing Comparative Insulation Values

Material	Conductivity	Resistivity	Authority
½" Rigid Fibre Board	0.66	1.52	A.I.A. File 37 Table V
½" Flexible Blanket	0.54	1.85	"
⅜" Plaster Board	3.73	0.27	"
¾" Metal lath and plaster	4.40	0.23	"
⅜" PLASTER BOARD plus FOIL (over ¾" air space)	0.41	2.44	"
Over ¾" air space faced one side with aluminum foil	0.46	2.17	
(Above values based on thickness as stated and based on "Thermal Insulation of Buildings"—AIA File 37)			
Wall Section with Fibre Insulation Board (temp. difference 70-72° F.)	.379	2.64	A. D. Little Inc.
Same section as above with Gold Bond "Reflectal" Insulation Board	.298	3.36	"

Structural Characteristics—Gold Bond Aluminum Foil Lath and full length board have all the well known structural characteristics of patented Gold Bond Gypsum Wallboard—including exceptional strength, lightness and ease of handling.

Fireproof Characteristics—The fire hazard of most types of ordinary insulation is completely avoided. It is made of pure gypsum—as fireproof as rock itself.

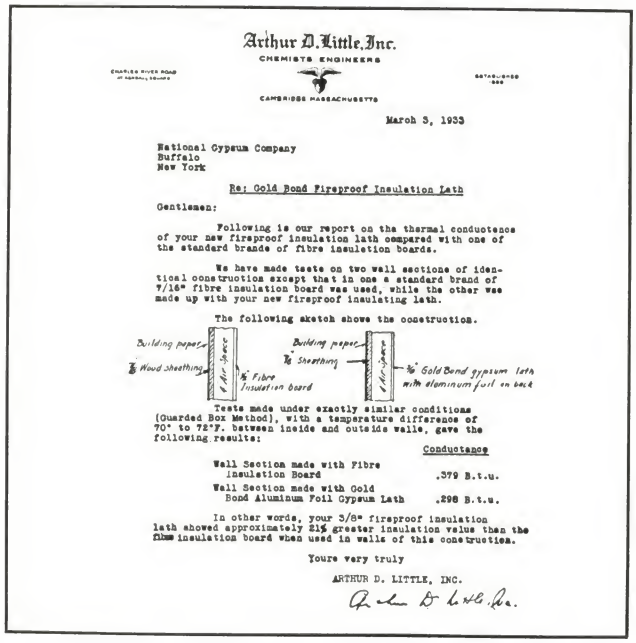
Moisture Resistance—An especially important feature is absolute freedom from warping, buckling and cracking.

Permanence—The solidity and permanence of Gold Bond Gypsum Lath and Board has long ago been amply proved. Recent strenuous tests and others taken over a period of years, fail to show any decline of efficiency with age in aluminum foil. This is explained by the fact that a reflective oxide coating forms on aluminum, in no way detracting from the insulating effect, but preventing corrosion even in the vicinity of large steel mills where the air is loaded with corrosive sulphur fumes.

Plaster Base—The patented indented surface found only on Gold Bond Gypsum Lath is the perfect plaster base, providing suction necessary for ideal application conditions.

Application

Gold Bond Aluminum Foil Insulation Lath and Wallboard are applied with metal side against framing members. Space between studs and joists is essential. Do not apply direct to another flat surface.



Arthur D. Little, Inc.
CHEMISTS ENGINEERS
CAMBRIDGE MASSACHUSETTS

March 3, 1933

National Gypsum Company
Buffalo
New York

Re: Gold Bond Fireproof Insulation Lath

Gentlemen:

Following is our report on the thermal conductance of your new fireproof insulation lath compared with one of the standard brands of fibre insulation boards.

We have made tests on two wall sections of identical construction except that in one a standard brand of 7/16" fibre insulation board was used, while the other was made up with your new fireproof insulating lath.

The following sketch shows the construction.

Tests made under exactly similar conditions (Guarded Box Method), with a temperature difference of 70° to 72°F. between inside and outside walls, gave the following results:

	Conductance
Wall Section made with Fibre Insulation Board	.379 B.t.u.
Wall Section made with Gold Bond Aluminum Foil Gypsum Lath	.298 B.t.u.

In other words, your 3/8" fireproof insulation lath showed approximately 21% greater insulation value than the fibre insulation board when used in walls of this construction.

Yours very truly

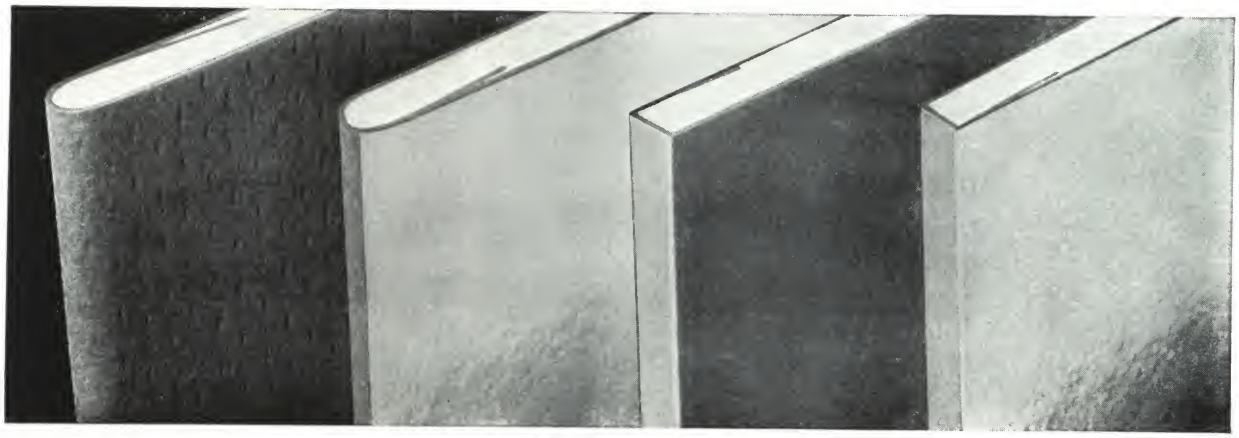
ARTHUR D. LITTLE, INC.

Sizes and Thicknesses

GOLD BOND ALUMINUM FOIL INSULATION LATH
⅜ in. thick. 16x32 and 16x48 in.

GOLD BOND ALUMINUM FOIL INSULATION BOARD

Thickness	Width	Lengths
¼, ⅜, ½ inch Sq. Edge	48 in.	6, 7, 8, 9, 10, 11, 12 ft.
½ in. T. & G. Edge	48 in.	8, 9, 10 ft.
½ in. Recessed Edge	48 in.	8, 9, 10 ft.



Showing the Front and Aluminum Foil-Covered Back of the Gold Bond Aluminum Foil Insulation Lath and Wallboard

GOLD BOND ROCK WOOL INSULATION

A Complete Line of Fireproof Rock Wool Products for Home Insulation
Wall Thickness and 2-inch Batts, Loose and Granulated Rock Wool

GOLD BOND Rock Wool embodies all the requisites of ideal insulation for homes. In addition to its effectiveness as an insulator, it is fireproof, lightweight, verminproof, moisture resistant and absolutely permanent.

Made of selected minerals which are reduced to a molten state under terrific heat and blown into long, silky fibres by steam. The fibres are then interlaced by special process to give the material strength and resiliency and to provide millions of tiny dead air insulating pockets. When the finished product is examined, it is hard to believe that this downy blanket of insulation was once stone.

Provides Year 'Round Insulation

Gold Bond Rock Wool is recommended for the exterior walls and under the attic floor or between the roof rafters. This builds a blanket of insulation around the house that prevents furnace heat from escaping and makes it easy to keep the entire house at an even temperature. Savings in fuel run as high as 40%.

In summer, this barrier of insulation is equally effective in keeping out the warm heat of the sun. Step into the attic of a non-insulated house on a hot, sultry day and it's like walking into an oven. Much of this heat finds its way to the sleeping rooms on the second floor making them unbearably warm and stuffy. Gold Bond Rock Wool prevents this heat from seeping through and the entire house is kept from 10 to 15° cooler.

Advantages of the Fibre-Skin Liner

As indicated below, Gold Bond Rock Wool Batts are supplied with or without the Fibre-Skin Liner, pictured at right. This is a tough, waterproofed membrane to which the batts are cemented. Provides effective wind-stoppage plus additional protection against moisture. An overlap on all four sides serves as a handy nailing surface and speeds application.

Styles and Thicknesses

STANDARD ROCK WOOL BATTS

15″ x 48″ x Wall Thickness	Supplied only with Fiber-Skin Liner
15″ x 23″ x Wall Thickness	With or Without Fiber-Skin Liner
15″ x 48″ 2″ Thickness	Supplied only with Fiber-Skin Liner
15″ x 23″ 2″ Thickness	With or Without Fiber-Skin Liner

HANDI-BATTS

8″ x 15″ x Wall Thickness	Without Fibre-Skin Liner

BAG GOODS

Gold Bond Loose Rock Wool	35 lb. bags
Gold Bond Granulated Rock Wool	35 lb. bags

Wall Thickness Batts fit snugly between studs and joists, building a blanket of insulation around the house. An overlap of the Fibre-Skin Liner on all sides provides a handy nailing surface.

Color, Conductivity and Density

All Gold Bond Rock Wool Products are white in color. Thermal conductivity is .254 B.t.u. per hour, per square foot, per inch thickness, per degree Fahrenheit temperature difference. When installed in the recommended wall thickness, it is eight to ten times more effective as an insulator than fibre insulation board of the usual ½ inch thickness.

Gold Bond Rock Wool is unusually dense, the weight running from 5 to 6 lbs. per cubic foot. This extra density means more fibres and accordingly, more voids or insulating air pockets. (The highest insulating efficiency of mineral fibre insulation is approximately 5 lbs. per cubic foot.)

Fireproof, Water-resistant, Sanitary

Gold Bond Rock Wool is absolutely fireproof—as fireproof as the minerals from which it is made . . . Effectively protected from dampness by a new process of actually coating the fibres with water-proofing material. Additional protection against moisture is provided by the water-proofed Fibre-Skin Liner . . . An all-mineral product Gold Bond Rock Wool is vermin-proof and contains nothing to attract rodents of any kind. Rats will not nest in it.

Gold Bond is absolutely fire-proof. Withstands the piercing flame of a blow-torch with no ill effects except a slight dis-coloration.

Permanent . . . Will Not Settle

Gold Bond Rock Wool will not decompose, corrode or deteriorate in any way. Is absolutely permanent and will outlast the building in which it is used. Tests have been made of Rock Wool installations made forty years ago and the material was always found to be in perfect condition and providing the same efficient insulation as when first used. Is resilient and will not settle with age or from vibration.

Specifications

Scope—Gold Bond Rock Wool Insulation shall be installed between studs of exterior walls and between joists under attic flooring (or between roof rafters).

Materials—Insulation shall be Gold Bond Rock Wool Insulation (specify type and thickness) of National Gypsum Company, Buffalo, N. Y., and delivered to job in the original containers.

Loose Rock Wool and Granulated Rock Wool

Loose Rock Wool is soft and fluffy and easily installed by hand to the desired thickness . . . Granulated Rock Wool is simply poured from the bag. Both products are moisture-proofed and absolutely fireproof. Supplied in 35-lb. bags.

Gold Bond Rock Wool Handi-Batts

Supplied in one size 8″ x 15″ x Wall Thickness, packed 24 in carton. A high quality, inexpensive type of moisture-proofed batt without the Fibre-Skin Liner. Easy to handle . . . quickly installed . . . fits snugly between studs and joists.

GOLD BOND DRY FILL INSULATION

A High-grade Gypsum Insulation Product Easily Installed in New or Old Homes . . . Provides Efficient Insulation at Low Cost . . . Fireproof

GOLD BOND DRY FILL INSULATION is composed chiefly of finely ground high grade gypsum and fibres. It is used dry between the ceiling joists and between the studs forming the exterior walls.

This barrier of insulation around the house provides additional comfort the year 'round and pays for itself many times over in the saving of fuel during the heating season. Keeps the entire home many degrees cooler in Summer and makes it easier to heat in Winter.

For buildings already built, it is generally possible to apply the insulating over the second story by removing every fifth board of attic floor where a single floor is used. If attic space is not floored over, the insulating is simple.

Made from Fireproof Gypsum

Gold Bond Insulation is made from the same high grade gypsum as all other Gold Bond Products. Gypsum itself has good insulating qualities and these are increased by a special fluffing process. This process increases the number of tiny air cells which it naturally contains and by doing so the insulating value is increased. The fluffing also increases the bulk, reduces its weight and minimizes any settling tendencies.

Its Advantages

1—An efficient insulation against heat, cold and sound.

2—It is an inert mineral product; absolutely fireproof.

3—Applied 3 to 4 in. thick, its cost is extremely low.

4—It weighs 18-20 lbs. per cu. ft.

5—Applied 3 in. thick, 100 sq. ft. of ceiling requires 420 lbs.

6—Easy to handle. Packed in 50-lb. bags.

7—Soaking will not injure the insulation after it dries out.

Gold Bond Dry Fill Insulation is poured between ceiling joists and exterior wall studs, building a blanket of insulation around the house.

High Insulation Value

Gold Bond Dry Fill has a coefficient thermal conductivity comparable with that of fibre insulation board. When installed 3 to 4 in. thick, or 6 to 8 times the thickness of ½-in. thick insulation boards, it has a minimum of over 5 times their insulation value.

SPECIFICATIONS FOR GOLD BOND DRY FILL INSULATION

Scope of Work

All outside walls and attic floor shall be insulated with Gold Bond Dry Fill Insulation.

Material

Insulating material shall be Gold Bond Dry Fill Insulation as manufactured by National Gypsum Company, Buffalo, N. Y. It shall be delivered to the job in manufacturer's original 50 lb. bags and shall be used directly from the bags.

Side Wall Insulation

The entire space between the plaster base or lath and the outside sheathing of all exterior frame walls shall be filled with Gold Bond Dry Fill Insulation from the sill to the underside of the roof plate.

The Insulation shall be left in its original fluffy state and not packed into position.

After the outside sheathing is in place and the walls to be insulated are receiving plaster base or lath, Gold Bond Insulation shall be poured into place in sections not over 48 in. in height at a time as the work of applying the plaster base or lath progresses.

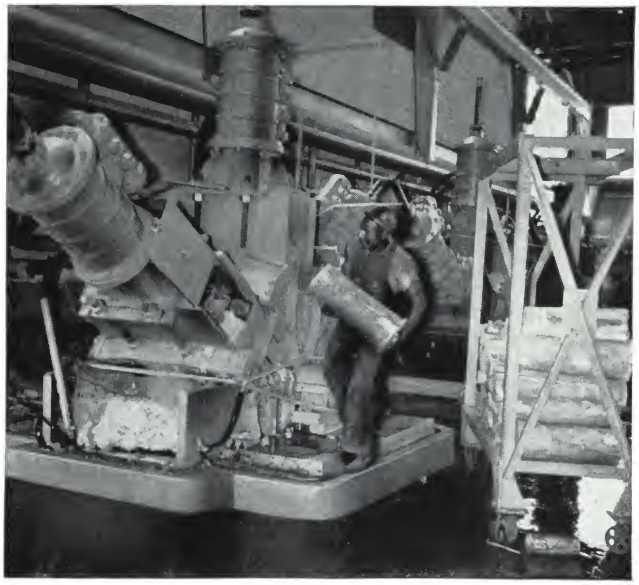
Ceiling Insulation

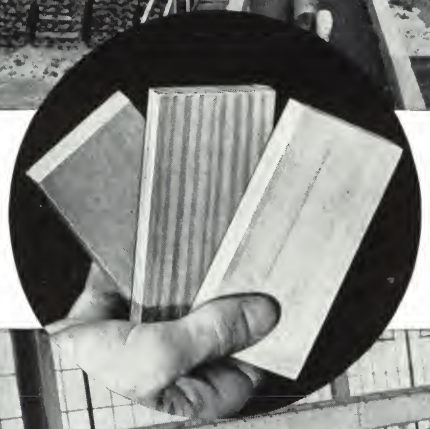
If gypsum lath is used for the second floor ceiling, Gold Bond Dry Fill Insulation may be installed as soon as the lath is in place. Pour from the bags to a depth of not less than 3 nor more than 4 inches. Sprinkle lightly with water to form a crust. If ceiling is lathed with wood or metal lath, then the insulation shall not be filled in until after the plaster is thoroughly dry.

Note for Carpenter: If the attic is to be floored, the floor must not be laid until the Gold Bond Insulation has been filled between the joists.

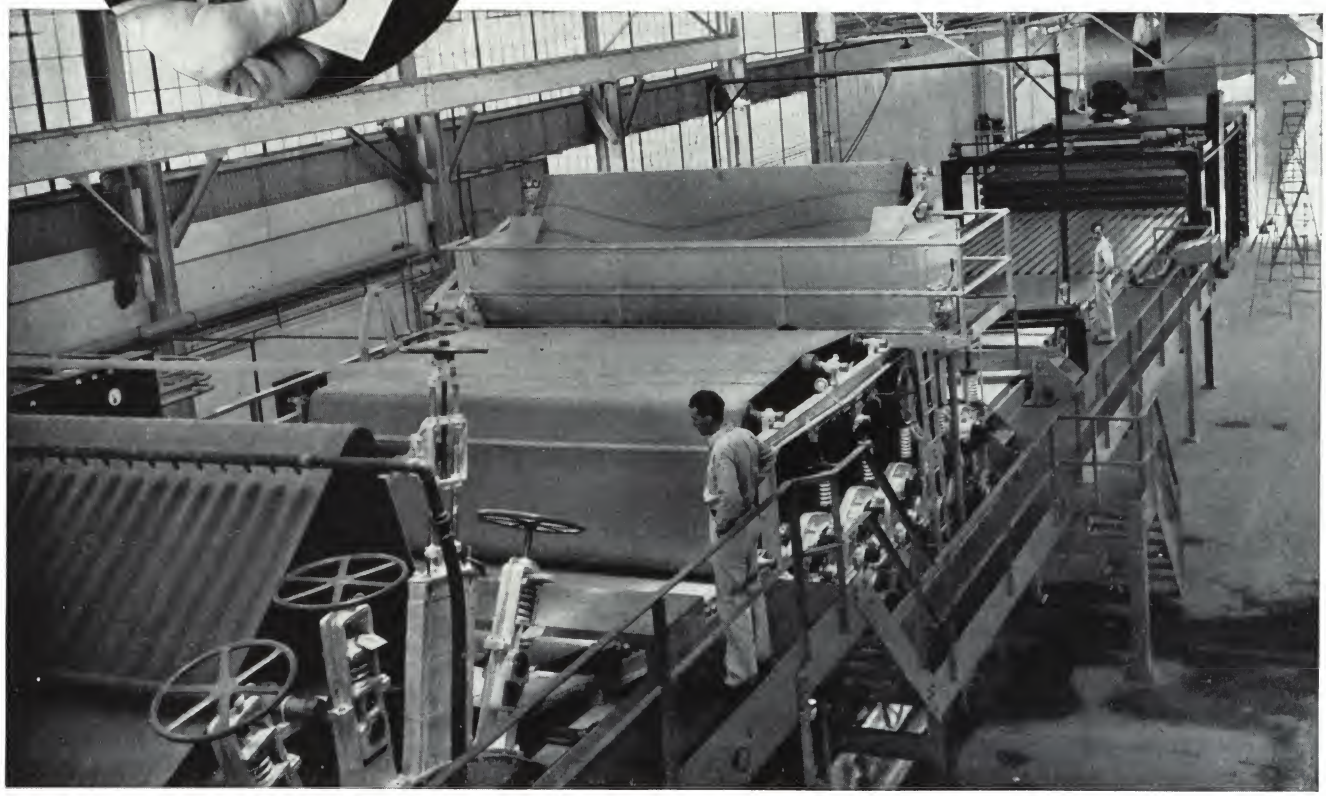
GOLD BOND'S MAMMOTH NEW PLANT IN MOBILE, ALA.

Devoted Exclusively to the Manufacture of Insulation Board. Located on Mobile Bay with Ideal Facilities for Shipping Via Rail or Water, Insuring Quick Service to Gold Bond Dealers Everywhere.





"Three woods are better than one" says Gold Bond Research. Three "live" Southern woods are used exclusively in the manufacture of Gold Bond Insulation Boards . . . Cottonwood for strength . . . Bay for formation and appearance . . . Pine for permanence. No deadwood, no waste materials are used. The fibres of all three woods are skillfully blended by Gold Bond's "Multi-Seal" Process to make a superior board . . . different from any other . . . with outstanding strength and insulation plus greater moisture resistance.



NATIONAL GYPSUM COMPANY

THE Gold Bond HANDBOOK

NATIONAL GYPSUM CO., GENERAL OFFICES, BUFFALO, N .Y.

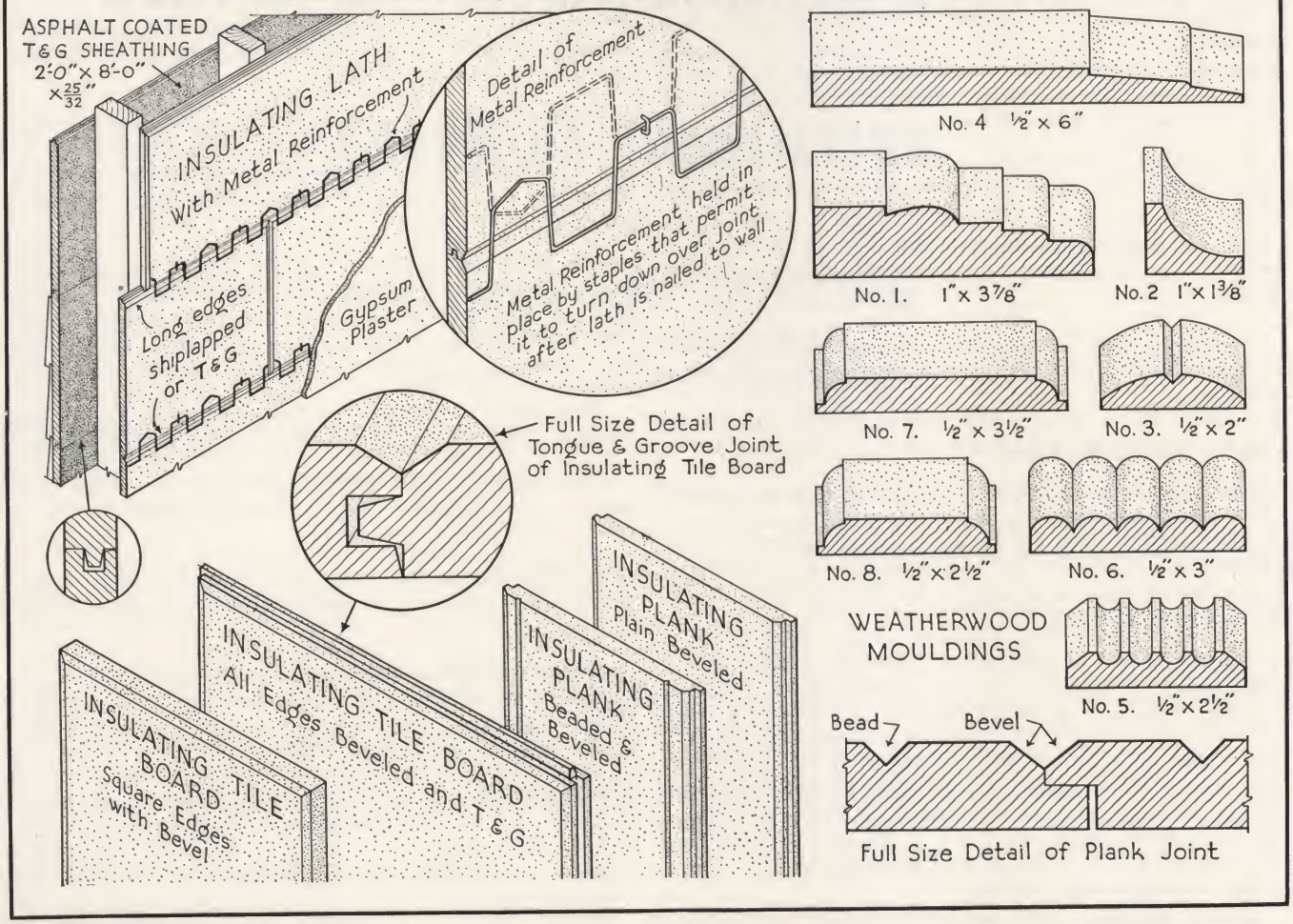
THE RED BOOK

THERMAL INSULATION

SOUND CONTROL

UNITED STATES GYPSUM COMPANY

DETAILS OF WEATHERWOOD INSULATION



Weatherwood Tile and Plank in Theater

Metal Reinforced Lath Has Extra Strength at Joints

RED TOP* INSULATING WOOL

Fill and Blanket Type • Wall Thick • Fireproof

DESCRIPTION—Red Top Insulating Wool is an extremely light, fluffy wool insulation made from the same ingredients contained in glass—a fireproof material.

The nature of the raw material used, particularly as to purity, permits accurate manufacturing control—the product is an absolutely uniform long-fibre wool. It contains a minimum of "shot" or other non-insulating materials that add weight.

TYPES—There are five (5) distinct types of Red Top Insulating Wool, each designed to fill a specific application need.

Junior Bat Wool—Red Top Junior Bat Insulating Wool is full thickness, 15 in. wide, and is shipped in paper bags or in cartons. The length of a Junior Bat in bag is 8½ in.; in carton, 11¾ in.

Bats—Red Top Insulating Wool Bats are either full or semi-thickness; either 15 in. or 23 in. wide x 36 in. long. They are shipped only in cartons. See table on next page for quantity per carton. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each bat. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base.

Strip Wool—Red Top Strip Wool is a continuous blanket, 15 in. or 23 in. wide x 9 ft. long, in either full or semi-thickness. Strips are packed in cartons, each strip being folded into thirds for easy removal and application. A heavy waterproof paper, highly vapor resistant, is cemented to the back of each strip. This paper backing extends 2 inches on each side forming nailing flanges which are folded back during shipment and unfolded when needed to hold the wool in place. The paper should always be applied facing the plaster base.

Nodulated—Red Top Nodulated Insulating Wool is designed for pouring into open spaces, such as between open attic joists or similar areas. It is shipped in paper bags, each containing 6⅔ cubic feet of material when properly fluffed and spread.

Granulated—Red Top Granulated Insulating Wool is especially developed for the "blown-in" method of installation. It is shipped in paper bags, each containing 8⅓ cubic feet.

RESILIENCE—AN OUTSTANDING CHARACTERISTIC—Unlike other fireproof wool insulating materials, Red Top Insulating Wool is springy and resilient—it will not mat. If compressed, it recovers virtually all of its original volume when the pressure is released and is easily fluffed up to its original volume.

LOW THERMAL CONDUCTIVITY—The heat conductivity of Red Top Insulating Wool (standard density) is .266 B.t.u.'s per inch thickness, per square foot, per hour, per degree F. difference in temperatures. (Tests by Armour Institute of Technology.)

LIGHT WEIGHT (DENSITY)—In its standard density, Red Top Insulating Wool weighs but 1½ pounds per cubic foot—the lightest of this class of materials.

Red Top Strip Wool is Ideal for Insulating Large Areas

Red Top Bat Wool is Economical for Broken Areas

*Trade-Mark

CLEAN • VERMINPROOF • PERMANENT—Red Top Insulating Wool is clean and odorless. There is nothing in its composition which will attract or furnish sustenance to rodents or other vermin. Once placed, it will not disintegrate, mat or settle. The fibres are tough, thoroughly interlaced, and resilient, and remain permanently efficient.

EASY TO INSTALL • LOW COST—All types of Red Top Insulating Wool are economical, easy to install, and permanent. They are furnished in dimensions to fit snugly into standard framing.

ADDED FIRE PROTECTION—In frame construction the usual void between the wall studs can be filled with this fireproof material thus eliminating fire carrying flues. Top floor ceilings and roofs blanketed with full thickness material act as fire stops.

CONVENIENT PACKAGES—The manner in which Red Top Insulating Wool is packaged adds to its convenience in shipping and handling. The extreme resiliency of Red Top Insulating Wool makes it possible to compress the strips and bats in relatively small voumes.

COVERAGE RED TOP INSULATING WOOL PACKAGES

Type of Wool	Thicknes	No. of Pieces Per Package	Size	Coverage Per Package	
				Gross Including 2 x 4's	Net Excluding 2 x 4's
Red Top Strip Wool	Full Thickness	4	15" x 9'	48 sq. ft.	45 sq. ft.
Red Top Strip Wool	Semi-Thicknes	6	15" x 9'	72 " "	67½ " "
Red Top Strip Wool	Full Thickness	4	23" x 9'	72 " "	69 " "
Red Top Strip Wool	Semi-Thicknes	6	23" x 9'	108 " "	103½ " "
Red Top Bat Wool	Full Thickness	12	15" x 36"	48 " "	45 " "
Red Top Bat Wool	Semi-Thicknes	20	15" x 36"	80 " "	75 " "
Red Top Bat Wool	Full Thickness	12	23" x 36"	72 " "	69 " "
Red Top Bat Wool	Semi-Thicknes	20	23" x 36"	120 " "	115 " "
Red Top Junior Bats (Carton)	Full Thickness	33	15" x 11¾"	43 " "	40 " "
Red Top Junior Bats (Bag)	Full Thickness	23	15" x 8½"	21½ " "	20 " "

Asphalt Coated Paper Backing Forms Moistureproof Barrier

Junior Bats Adaptable to Complicated Framing Plans

SOUND CONTROL SERVICE

Engineering Sales Division

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RESEARCH, DEVELOPMENT AND SERVICE

ACOUSTICAL MATERIALS ASSOCIATION—Manufacturers of sound absorbing materials have formed the Acoustical Materials Association, the purpose of which is to promote research in architectural acoustics and furnish architects and builders with reliable data on acoustical materials. Official Laboratories have been established under the direction of the leading authorities on this subject. The Association published its first data in February, 1934, and its sixth publication in March, 1938. You may obtain a copy of this data by calling the nearest USG Office.

RESEARCH and DEVELOPMENT—All USG Sound Control Materials and Systems are the result of directed research at the Building Materials Laboratory of the United States Gypsum Company. This laboratory occupies an entire two story building owned by the United States Gypsum Company and located at 1253 West Diversey Parkway, Chicago, Illinois, especially equipped for research and testing. The research work is carried out under the direction of trained physicists and chemists, architectural engineers and investigators, comprising a personnel of some fifty individuals. Here new materials and methods are produced, tested and developed.

The laboratory is one of the few owned and maintained by a manufacturer of acoustical products. It is used to test and improve upon modern developments in the manufacture of acoustical materials. It is also used for control tests on the company's output, so that the acoustical absorption and sound insulation afforded by the sound control products of the United States Gypsum Company are constantly maintained equal or superior to the published determinations of recognized acoustical laboratories.

SERVICE—The United States Gypsum Company maintains a fully competent experienced corps of acoustical engineers, completely equipped to assist architects on any problem involving acoustical correction or sound insulation. They render this service, without obligation, in advance of the building construction or will gladly advise corrective methods for existing buildings in which sound difficulties are experienced.

In auditoriums this service includes analysis of the effect of curved or other sound concentrating surfaces, and investigation for objectionable echoes. In each case it indicates changes in design where they seem advisable. Where the reverberation is too great for comfort recommendations are made for economically covering the necessary areas with acoustical absorbents.

Because the United States Gypsum Company handles all phases of the problem including manufacture and installation through its Engineering Sales Division or its authorized erectors and provides, not only materials for sound absorption, but also a complete system for the insulation of sound, architects are assured that absorption materials will not be recommended where sound insulation is required or vice versa.

ACOUSTONE • USG ACOUSTICAL TILE

Incombustible • Decorative

PHYSICAL CHARACTERISTICS

COMPOSITION and THICKNESS—Acoustone* is formed from inorganic, specially processed filaments. It provides an unusually high degree of sound absorption. The standard thicknesses are ¾ and 1 inch.

ACOUSTONE D—TECHNICAL DATA—Acoustone D has been tested and approved as a sound absorbent of high efficiency by recognized acoustical laboratories.

Absorption—The coefficients of absorption shown below are from tests made by the Acoustical Materials Association Laboratories:

Pitch	C2	C3	C4	C5	C6	Noise Red. Coef.
Frequency	128	256	512	1024	2048	
UNPAINTED						
¾-in. Thick	.19	.39	.66	.78	.65	.60
1-in. Thick	.37	.65	.84	.79	.72	.75
BRUSH PAINTED WITH LEAD AND OIL PAINT						
¾-in. Thick	.24	.52	.69	.66	.58	.60
1-in. Thick	.43	.71	.83	.77	.69	.75

SIZES (AREAS)—Tiles are made in the following standard rectangular sizes: 12 x 12 in., 9 x 18 in. Special shapes and sizes may be obtained when required.

OUTSTANDING DECORATIVE APPEARANCE—In addition to its high degree of acoustical efficiency, it is outstanding in its decorative effect. The surface texture is quite similar to travertine stone, surpassing it, however, in the richness and warmth it supplies through a wider range of color tones. From the viewpoint of design, it is adapted to harmonious, unobtrusive inclusion in any decorative scheme. Ashlar masonry walls for interiors can be constructed with Acoustone facings that are as beautiful as natural stone. Interiors in the modern trend may be delightfully handled in tile with a metallic lustre in many shades and colors. Acoustone may be readily cut to irregular sizes and shapes. It fits all decorative interiors and is particularly adaptable to modern motifs. The tile may be laid up in many interesting patterns. There is no disconcerting mechanical effect. It is sanitary and easily cleaned. Due to its natural beauty, Acoustone usually is installed without decoration. If desired, Acoustone may be painted without materially affecting its sound absorbent efficiency. Colored borders, cornices in relief, and modified coffered work are easily obtained. Joints between tile units may be accented with a V profile for decorative purposes or made less prominent as desired.

*Registered Trade-Mark

COLORS—Acoustone is furnished in standard integral colors of light-reflecting white, ivory or cream. Special integral colors will be made to order. Acoustone may be painted with ordinary lead and oil or similar wall paints without materially affecting its acoustical efficiency. When left undecorated, the inherent beauty of Acoustone enhances any decorative plan. Acoustone has none of the appearance of a mechanical device. Its beauty improves the appearance of any room. It is available in delicate pastel shades for the enrichment of borders, with fields in efficient light reflecting shades. It is readily cleanable which greatly reduces maintenance costs.

INCOMBUSTIBLE—Since it is made from specially processed mineral filaments, Acoustone is incombustible.

LIGHT WEIGHT—Due to its extremely light weight, it is safely and permanently cemented over plaster in both new and old work.

EASILY CLEANED—The complete and thorough cleaning of the porous structure of Acoustone with an ordinary vacuum cleaner thoroughly evacuates any foreign matter that may become lodged in the tile. Accumulations of dirt on the surface of the material are easily removed by the same method restoring the original color and appearance. The cost of such cleaning is less than one-quarter of a cent per square foot of area cleaned and the wear on the tile, incidental to the cleaning, is so negligible that no appreciable difference is made in its sound absorbing ability after repeated cleanings.

DURABLE—Because Acoustone is made from especially processed mineral filaments integrally colored and completely cleanable, it is as enduring as the structure in which it is installed.

SANITARY—Acoustone offers complete sanitation. It is inorganic, durable, completely cleanable. It provides an aseptic, readily and cheaply cleaned sound absorbent for hospitals, sanitariums, and restaurants.

INSTALLATION—The manufacture and acoustical design of Acoustone is entirely under the control and is the sole responsibility of the United States Gypsum Company. Installation is by the United States Gypsum Company or its authorized erectors.

This policy enables the purchaser to buy a result without reference to the manner in which the result is obtained. It definitely fixes the responsibility as it frees the purchaser or the architect from all details.

Such a policy, of course, means that the United States Gypsum Company or its authorized erectors will refuse to install Acoustone where satisfactory results will not be obtained.

The installation of Acoustone may be made in busy offices, banks, restaurants, brokers' offices, hospitals, etc., at times that will eliminate any interruption in the usual routine.

For this work only experienced mechanics are employed, who will carefully protect the walls, floors and furnishings against damage during the installation.

ECONOMICAL—Acoustone is not expensive to install. When the savings due to its low maintenance costs are considered, it is actually a low cost acoustical material.

Specifications · ACOUSTONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Acoustone. If more than one thickness of Tile is used, specify the thickness for the various areas.*

Acoustone Ceiling in Office of Banker's Trust Co., New York

(2) BASE

NOTE—*Describe base.*

(a) On new work, a good level brown coat of plaster offers the best base for Acoustone.

(b) Acoustone may be applied direct to any clean level surface strong enough to support it.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) Acoustical treatment material shall be **[¾-in.] [1-in.]** thick Acoustone of colors selected by the architect.

(3b) Joints between Tiles shall be **[a V formed by accurately beveling the tile edges] [as detailed] [specify].**

(3c) Tiles on walls and fields of ceilings shall be of size, shape, disposition and color as shown on the various details and approved shop drawings.

(4) APPLICATION of ACOUSTONE

(4a) Acoustone shall be completely erected by the United States Gypsum Company or one of its authorized erectors of sizes, colors and pattern shown on the drawings and details.

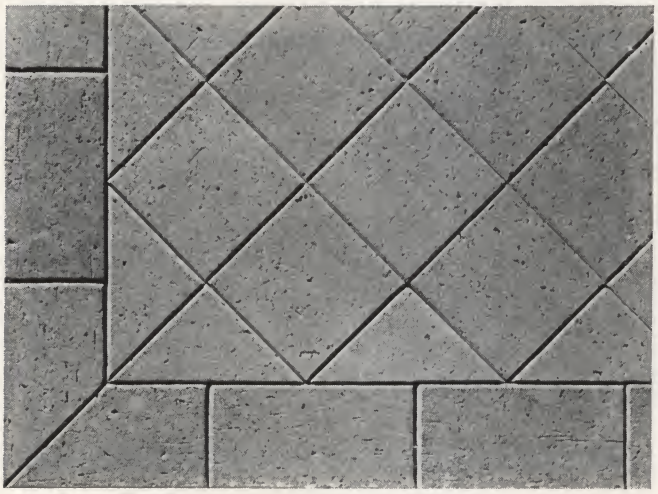
(4b) The Tile shall be laid close, accurately cemented in position in full conformance with the manufacturer's specifications.

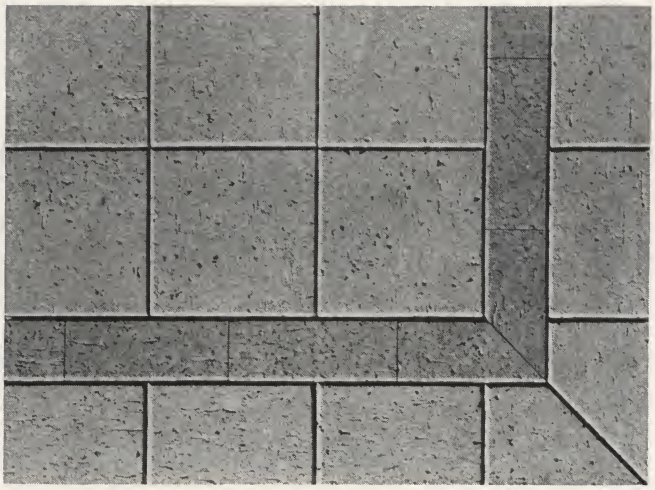
SHORT FORM

The contractor shall allow the sum of $..... to cover the cost of acoustical treatment, using Acoustone to be furnished and erected by the United States Gypsum Company or one of its authorized erectors as directed and approved by the architect.

TYPICAL ACOUSTONE PATTERNS

Acoustone May Be Obtained on Order, Integrally Colored to Special Shades





INSTALLATIONS OF PERFATONE* AND QUIETONE*

For Perfatone See Page 9

For Quietone See Page 10

*Trade-Marks

United States Gypsum Company

QUIETONE*
Low Density Wood Fiber Acoustical Tile
PHYSICAL CHARACTERISTICS

DESCRIPTION—Quietone is a decorative interior tile used to absorb sound and correct noisy conditions in offices, restaurants, etc., and to improve hearing in auditoriums, theatres, and buildings of similar use. See illustration Page 8.

It is a wood fiber product but should not be confused with ordinary insulating tiles used primarily for insulating purposes. It has unusually low density and exceptionally high and uniform absorption. It is a homogeneous material made by a unit felting process to produce a material of high acoustical excellence. Its attractive surface is free from surface oddities and puncturing, not uncommon in acoustical materials.

ABSORPTION—Quietone classes among the high-efficiency absorbents, the one-inch thickness having a 70 per cent noise reduction through the significant pitches, 256 to 2048 cycles. This means that through these pitches it absorbs 70 per cent of all sound striking it and that the reverberation time and the noise level in the room where it is used are greatly reduced.

It is important to note in considering the efficiency of Quietone that it has unusually efficient absorption through the significant ranges. This means, for example, that Quietone is efficient in absorbing the sound of the human voice, around 512 cycles, and also efficient in absorbing the noise of a typewriter, an octave or more higher.

Quietone Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Reduction Coefficient
1-in.	.30	.52	.73	.82	.75	.70

Absorption Coefficients are based on cemented to plaster mountings.

COLOR AND TEXTURE—Quietone is made in two standard textures, sanded and brushed surface. The natural color of the sanded texture is ivory, that of the brushed surface texture is a mottled light buff.

On order either of these textures or surfaces will be mill-tinted to any of the five standard colors in light pastel shades of Rose, Cream, Blue, Buff, and Green, all of relatively high light reflecting value.

Quietone may be spray tinted with lithopone or titanox paint reduced with mineral spirits.

SIZE AND THICKNESS—The standard size of Quietone is 12 x 12 in. in area and 1 inch thick. Either the brushed or sanded surface can be obtained in this size.

All Quietone units are finished on all four edges with a $\frac{3}{16}$-in. bevel. Other sizes may be obtained at a slight increase in cost.

ADVANTAGES—

High Absorption—The absorption at the significant frequencies is extremely high.

Low Cost—In spite of its high efficiency, Quietone is a low cost material—so low in cost that it makes possible the use of acoustical treatment in almost any type of building where noise is a problem.

Appearance—The surface of Quietone is similar to that of other fiber tiles used primarily for decoration. It is free from perforations and other surface peculiarities that fall into a regular pattern. Its efficiency is secured by the natural surface of the tile in combination with a low and accurately controlled density. The result is an appearance just as pleasing as if the tile were made first of all for a decorative rather than an acoustical effect. This appearance is suited to any type of interior.

Maintenance—Cleaning is always cheaper than redecorating. Quietone can be cleaned with a vacuum cleaner. The mill-tinted pastel shades are deep tinted to withstand several cleanings before re-tinting becomes necessary. Painting reduces the sound absorptive capacity and should not be resorted to. A change in color should be accomplished by tinting or staining.

Easy Erection—Quietone is easily and quickly erected in either an old or a new building. A good level plaster (preferably a brown coat) or any clean level surface strong enough to support it is all that is required.

Specifications · QUIETONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List here all walls and ceilings to be covered with Quietone. If more than one texture or color of material is to be used, list each separately for the various areas.*

(2) BASE

NOTE—*Describe base.*

(a) *On new work, a good level brown coat of plaster offers the best base for Quietone.*

(b) *Quietone may be applied direct to any clean level surface strong enough to support it.*

(3) ACOUSTICAL MATERIAL

(3a) Acoustical material shall be Quietone in **[a natural color] [mill tinted in standard shades] [cream] [green] [rose] [buff] [blue]** and **[sanded] [brushed]** surface.

(3b) Tile shall in general be 1 inch thick by 12 x 12 in. with special sizes as shown on the various details.

(3c) Joints between tile shall be a $\frac{3}{16}$-in. "V" formed by accurate beveling.

(4) APPLICATION of QUIETONE

NOTE—*Quietone may be applied in a diagonal or a straight pattern with a border effect if desired. Other patterns may be worked out but they will require special tile sizes.*

(4a) Quietone shall be completely erected by the United States Gypsum Company or by one of its authorized erectors.

(4b) The tile shall be cemented or cemented and nailed in position, care being taken to align tile and maintain an even surface in full conformance with the manufacturer's specifications.

*Trade Mark

PERFATONE*

Incombustible Perforated Metal Tile Type

PHYSICAL CHARACTERISTICS

DESCRIPTION—Perfatone is a perforated metal tile concealing highly absorbent pads of mineral wool. The edges of the tile are beveled and returned vertically to be held firmly in place by special tee runners. The tile are painted to comply with rigid specifications and to give a finish pleasing in color, high in light reflection, and protected against abrasion due to ordinary maintenance cleaning. See illustration Page 8.

The mineral wool pads are furnished either completely enclosed by a fire resistive membrane or wrapped in flame proofed muslin. With the latter type the tops of the pads are fully sealed during erection with fire resistive membrane. Either type of pad eliminates the so-called breathing action and avoids the accumulation of dirt on the surface which would result in a loss of absorption and an undesirable condition from the standpoint of sanitation.

COLOR and FINISH—Perfatone is finished in baked enamel. It is made in two standard colors, ivory for use where warmth is desired, and white. Both have high light reflection.

SIZES—Perfatone is made in units 12 x 24 in. with a center groove which gives the effect of 12 x 12 in. units.

ADVANTAGES—

Fireproof—The metal tile and the mineral wool pads are entirely incombustible. The pad wrapping is all flame-proofed and fire resistive.

High Efficiency—The table at right shows the extremely high absorption of Perfatone.

Washable—The painted metal surface of Perfatone may be washed many times before it becomes necessary to repaint it. Washing in no way affects the absorption efficiency of the tile or its appearance.

Paintable—Perfatone can be repainted many times without affecting the absorption efficiency of the construction. The perforations constitute approximately fourteen per cent of the total tile surface, and although small enough to blend into the neutral color of the tile, they are still large enough to maintain full absorption efficiency unaffected by many paintings.

ABSORPTION—In addition to its being the highest type of acoustical treatment from a construction standpoint, Perfatone is also one of the best from the standpoint of absorption efficiency. Its absorption coefficients present a fairly flat curve at the significant pitches, meaning more than average uniformity through the most important sound frequencies. Coefficients below are by the Official Laboratories of the Acoustical Materials Association.

Perfatone Type	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Red. Coef.
Muslin Wrap. Pad (Type A Pad)	.37	.52	.96	.94	.88	.85
Memb. Enc. Pad (Type B Pad)	.43	.61	.91	.88	.77	.80
Mounting: Metal supports applied to 1 x 2-in. wood furring.						

Specifications . PERFATONE

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Perfatone.*

(2) BASE

(2a) Where suspended ceiling construction is used, the necessary channel grillage shall be furnished and placed by the acoustical contractor.

(2b) Where Perfatone construction is to be held against concrete joist construction, wire ties shall be furnished in place by others on not more than 4-ft. centers along all joist bottoms. These ties shall consist of two No. 10 gauge galvanized wire projecting 6 inches below joist bottom. The ties must be carefully lined up in lines at right angles to the joists.

(3) ACOUSTICAL TREATMENT MATERIAL

Acoustical treatment material shall be Perfatone held firmly in place by special tee runners. The perforated metal tile shall conceal a mineral wool absorbent pad held slightly away from the perforated metal surface by means of a pad support. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proof membrane. (Or the absorbent pad shall be completely wrapped in flame-proof muslin and the top sealed during erection with flame-proof membrane.)

The perforated metal tile shall have a prime and finish coat of baked enamel on the back, and on the face a prime coat, an intermediate coat, and a finish coat of baked enamel.

(4) APPLICATION of PERFATONE

(4a) SUSPENDED CEILING CONSTRUCTION—The acoustical contractor shall fasten the special tee runners to the under-surface of the carrier channels, on 24-inch centers to hold the perforated metal tile. Perforated metal tile, pad supports, and absorbent pad shall be carefully assembled and pressed into position on the special tee runner. All edges shall be kept in alignment and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by **[the acoustical contractor] [others]** at the junction of the perforated tile ceiling with the walls and columns. Care shall be taken in cutting and fitting the tile around all openings.

(4b) PLASTERED CEILING CONSTRUCTION—

NOTE—*Same as in (4a) except that the special tee runners shall be attached to the present ceiling by means of suitable clips or wire and brought to a level surface.*

SHORT FORM

Perfatone treatment shall be furnished and erected by the United States Gypsum Company or one of its authorized erectors on all areas indicated on plans to receive acoustical treatment.

*Trade Mark

United States Gypsum Company

SABINITE* ACOUSTICAL PLASTER

Incombustible • Economical

PHYSICAL CHARACTERISTICS

TYPES—

Sabinite A—For general use on ceilings and walls.

Sabinite 38—Specially developed to resist moisture in natatoriums, shower rooms, laundries, etc., when applied over Oriental Exterior plaster base. (See below.)

Casting Sabinite—For casting ornamental parts.

COMPOSITION—Sabinite Acoustical Plaster is a permanent, reasonably priced, sound-absorbing plaster. Sabinite A is used over the standard scratch and brown coats, in place of hard, sound-repellent plaster finishes. Sabinite No. 38 is applied over Oriental Exterior Stucco base coats where extreme humidity, as in natatoriums, is present.

ABSORPTION—Sabinite absorbs sound because of its great multitude of tortuous, minute passages, which have their start in tiny openings at its surface.

Coefficients below are by the Official Laboratories of the Acoustical Materials Association:

Sabinite Type	Thickness	128 Cyc.	256 Cyc.	512 Cyc.	1024 Cyc.	2048 Cyc.	Red. Coef.
A	½-in.	.34	.30	.31	.61	.69	.50
A	¾-in.	.36	.37	.55	.67	.67	.55
38	½-in.	.25	.26	.32	.60	.76	.50

THICKNESS—Applied ½-in. thick in two successive coats, or ¾-in. thick in three coats—each ¼-in. thick, with the usual plasterer's tools.

APPEARANCE—Sabinite presents an interesting surface texture similar to a pebbled, semi-smooth stucco. Sabinite A is usually finished with a cork float, but may be trowel finished.

COLORS—Both Sabinite A and No. 38 are furnished in white and four standard colors or tints: ecru, ivory, cream, buff. Special colors will be furnished on orders exceeding 5 tons. On small orders, Sabinite may be tinted to special colors on the job.

It can be painted or decorated after application without loss of efficiency. (See specifications, page 12.)

INCOMBUSTIBLE—Composed of inorganic aggregates bonded together with gypsum plaster, long known as a fireproofing material, it is incombustible.

DURABLE—Sabinite Plaster is as rugged and durable as the ordinary sand float finish.

It is unaffected by dampness and does not shrink or swell with climatic changes.

SANITARY—Because it contains no vegetable or animal matter, Sabinite is sanitary. Like any gypsum plaster it is vermin proof.

DISTRIBUTION—Sabinite is made at the principal mills of the United States Gypsum Company, conveniently located for lowest transportation costs and quick delivery.

COVERING CAPACITY—One ton of Sabinite A applied in two coats, each ¼-in. thick, will cover a surface of from 100 to 110 sq. yds.

A ton of Sabinite No. 38 covers from 60 to 75 yards.

APPLICATION and SUPERVISION—It is applied by the plastering contractor in lieu of the usual finish. Its installation is always supervised by an experienced representative of the United States Gypsum Company.

EASY TO APPLY—Nothing but water is added to make Sabinite ready for application. It spreads with a trowel from the hawk, like ordinary plaster and bonds easily and firmly to the base coat.

ECONOMICAL—The low cost of the material, ease of application and excellent covering capacity, coupled with its relatively high sound absorption, makes Sabinite a most economical material.

KANSAS CITY AUDITORIUM, KANSAS CITY, MO.

Gentry, Voskamp & Neville, Archts. Sabinite Ceiling assures excellent hearing condition.

*Registered Trade-Mark

Specification . SABINITE ACOUSTICAL PLASTER

NOTE—*Notes are explanatory or advisory only and should not be included in the specifications.*

(1) WORK INCLUDED

NOTE—*List and locate all walls and ceilings to be covered with Sabinite Acoustical Plaster. If Sabinite A, No. 38, and casting Sabinite are used, list and locate separately. If different colors of integrally tinted Sabinite are used, specify the colors for the various areas.*

(2) GROUNDS

On walls, in addition to the usual grounds set for the scratch and brown coat plaster base, set additional **[½-in.] [¾-in.]** thick grounds to assure proper thickness of the Sabinite and form nailing for wood trim, etc. All corner beads shall be set to conform to the increased plaster thickness.

(3) ACOUSTICAL TREATMENT MATERIAL

(3a) Acoustical Treatment material shall be (Sabinite A) (Sabinite 38] [and] [Casting Sabinite] Acoustical Plaster as manufactured by the United States Gypsum Company.

(3b) Sabinite shall be integrally tinted by the manufacturer at the mill.

NOTE—*Integrally tinted Sabinite should be a shade lighter than the same color would be in paint because the texture of Sabinite casts a slight darkening shadow.*

(4) SCRATCH and BROWN COAT BASE

(4a) SABINITE FOR GENERAL USE—All surfaces to receive Sabinite A shall be given scratch and brown coats of gypsum plaster containing no more than two parts of sand (by wt.) to one part of plaster.

(4b) SABINITE No. 38—Hydraulic Sabinite shall be applied over Oriental Exterior Stucco base coat.

NOTE—*Oriental Exterior Stucco Base Coat is a prepared material requiring no sand or other addition except water. It is applied in two coats in place of the regular scratch and brown coats. Use where humidity is severe.*

(4c) The scratch coat shall be thoroughly broomed before the second or brown coat is applied. The second or brown coat shall be deeply raked after straightening.

(5) APPLICATION of SABINITE

(5a) The application of Sabinite shall only be made under the supervision of the United States Gypsum Company.

The plastering contractor shall arrange with the nearest sales office of the United States Gypsum Company for the servicing of Sabinite and shall not commence its application until so directed by the manufacturer's service representative.

Sabinite shall be applied in **[two] [three]** coats each ¼ in. thick over a thoroughly dry base coat. The second **[and third]** coat**[s]** shall not be applied until the previous coat has set. The instructions of the service representative for floating and troweling each coat shall be observed throughout regardless of his presence.

(5b) In Casting Sabinite, a fairly dry mix is used and pressed in a mold to a thickness of about ½ in. and backed with molding plaster and fiber—the procedure is the same as for ordinary cast plaster work. Cast Sabinite shall be attached in the same manner as ordinary cast plaster work.

PAINTING SABINITE

SPRAY PAINTING—Sabinite may be spray painted. Depending on the conditions and the effects desired the United States Gypsum Company will make definite recommendations as to the paint or spraying lacquer to be used, the type of spraying equipment best adapted to the conditions and application specifications.

OTHER USG SOUND CONTROL MATERIALS AND SYSTEMS

USG System of Sound Insulation

Where it is necessary to provide effective sound insulation such as in radio studios the USG System of Sound Insulation gives real results. It is not just a material or a collection of materials but a scientifically balanced system which by minute attention to all details achieves remarkable results.

Trembar Resilient Machine Bases

The extremely annoying vibrations and structural borne noise of motors, motor generators, ventilating equipment, printing presses and similar machinery is very effectively deadened by Trembar Resilient Machine Bases. Each base is especially designed to fit the equipment to be supported which means, of course, very much more effectiveness than any standard base or material can provide.

Perforated Asbestos or Hardboard

When a high absorption acoustical treatment is required in locations subject to severe abrasion or high humidity either Perforated Asbestos or Hardboard concealing a mineral wool pad is recommended.

Radio Station Control Booth of Perforated Hardboard

THE RED BOOK

UNITED STATES GYPSUM COMPANY

300 West Adams Street

Chicago, Illinois

• • •

Sales Offices

Atlanta, Ga. . . . . 1440 Citizens and Southern Bank Bldg.
Baltimore, Md. . . . . 1400 Standard Oil Bldg.
Birmingham, Ala. . . . . 1203 Comer Bldg.
Boston, Mass. . . . 731 Statler Office Bldg., 20 Providence St.
Buffalo, N. Y. . . . . 514 Brisbane Bldg.
Cincinnati, Ohio . . . . . 3012 Carew Tower
Cleveland, Ohio . . . . . 627-629 Hanna Bldg.
Dallas, Tex. . . . . 1302 Santa Fe Bldg.
Denver, Colo. . . . . 514 18th St.
Detroit, Mich. . . . . 10090 West Jefferson St.
Houston, Tex. . . . . 4616 Main St.
Indianapolis, Ind. . . . . 815 Architects' and Builders' Bldg.
Kansas City, Mo. . . . . 438 Ward Parkway
Los Angeles, Calif. . 507 Architects Bldg., 5th St. at Figueroa
Milwaukee, Wis. . . . . (At Mill) 439 W. Oregon St.
Minneapolis, Minn. . . . . 1308 Foshay Tower
New York, N. Y. . . . . 30 Rockefeller Plaza
Omaha, Neb. . . . . 921 Woodmen of the World Bldg.
Philadelphia, Pa. . . . . 1616 Walnut St.
Pittsburgh, Pa. . . . . 712 Grant Bldg.
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St. Louis, Mo. . . . . 1047 Big Ben Blvd.
San Francisco, Calif. . . . . 2501 Harrison St.
Washington, D. C. . Investment Bldg., 15th and K Sts., N. W.

Samson Plaster Board Company
Sales Agents for United States Gypsum Company
Crosby Building, Buffalo, N. Y.

UNITED STATES GYPSUM COMPANY

THE UPSON COMPANY

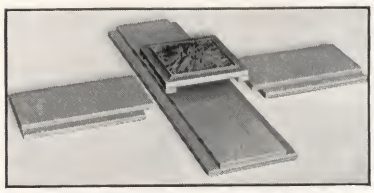
10 Upson Point
LOCKPORT, N. Y.

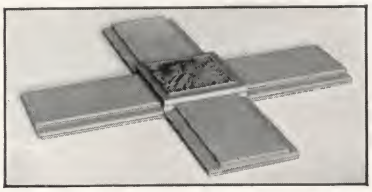
You can identify genuine Upson Wallboard Products by the famous blue center running through each panel edge.

Makers of:
UPSON STABILIZED BOARD
UPSON ARTWAL—Tiled and Smooth
UPSON FIBRE-TILE—"Dubl-Thik" and Standard
UPSON DECORATIVE MOULDINGS, DUPLEX MOULDINGS AND ACCESSORIES

UPSON PRODUCTS — for Walls and Ceilings
Table of Items, Lengths, Widths, Thicknesses, Description of Features

Product	Thickness	Width	Lengths	Features and Qualities
Upson Board (one surface "pebbled"; the other side satin smooth)	3/16″ 1/4″ 3/4″ 3/8″ 3/8″	32″ 48″ 64″ 48″ 48″ 8 ft.	6, 7, 8, 9, 10, 12, 14, 16 ft. 6, 7, 8, 9, 10, 12, 14, 16 ft. 6, 8, 10, 12, 16 ft. 14 ft.	Exceptionally tough, mar-resistant; combines lightness with strength, easily and quickly applied. Surface hard and smooth-textured (fuzzless); pre-sized to take paint readily and sparingly. Factory-finished in ivory color. Note particularly Upson 3/8″ in 8x14-ft. panels. (See illus.)
Upson Artwal (Tiled (4″x4″) and Smooth 5 colors—Black, White Springtime Green, Pastel Blue, Old Ivory)	3/16″	48″	8 ft.	A finished wall lining—tiled or smooth—with a baked enamel surface. Surface hard and tough—will not crack, craze, chip, or peel. Finish resistant to alkalis, acids, moisture, stain, and soot. Washable with soap and water. Panels are waterproofed on back. Surface of each panel protected by heavy, slip sheet.
Upson Fibre-Tile (scored in tile-like squares 4″x4″, surface unfinished but pre-sized for desired finish)	scant 1/4″ Dubl-Thik	48″ 48″	6, 7, 8, 9, 10, 12, 14, 16 ft. 12 ft.	Possessing the character and quality of Upson Board, with exception that the smooth surface is scored in 4″x4″ tile-like squares. Surface is hard and smooth (fuzzless), pre-sized to take paint or enamel readily. Thoroughly waterproofed, and can be cleaned with a damp cloth.
Upson Decorative Mouldings (for use with Upson Artwal; same 5 colors, and in chromium)	Cap Mldg. 2″ Edge Mldg. 3/4″ Division Mldg. 7/8″ Outside Corner 1″ Inside Corner 7/8″		8 ft. 8 ft. 8 ft. 8 ft. 8 ft.	A metal-surfaced moulding, in five types, for use with Upson Artwal, Upson Fibre-Tile or Upson Board. In colors matching those of Artwal, and also in chromium. Applied with small nails furnished.
Upson Duplex Mouldings unpainted, for "relief ceiling" effects)	1/2″ overall	3″ 4″ 5″ 6″ overall	12, 14, 16 ft.	Serve dual purpose of concealing joints in wallboard and providing third dimension—*relief*—in ceilings. Varying widths enable choice of ceiling design. Called "Duplex" because double in formation, bottom section being 1″ wider than top section, i.e., 2″ (top) on 3″ (bottom), centered—3″ wide, overall.
Upson Relief Ornaments (to conceal moulding intersection joints)	Four designs, sized to fit over various sized mouldings, at intersections			Serve dual purpose of concealing joints at moulding intersections, and contributing an added touch of design to the ceiling. Ornaments are moulded, and shaped on the back to build out the set back in Duplex Moulding. (See illus.)
Upson Relief Strips (for wall paneling)	1/4″	3″, 4″, 6″	12, 14, 16 ft.	Of regulation Upson Board, in 3 widths, for use as wall paneling to conceal wallboard joints.
Upson Wood Mouldings (for edging of wall-paneling Relief Strips)	Three designs and widths			Of wood, in 3 designs and sizes, for use as edging or finish for Upson Relief Strips employed in wall-paneling.
Upson Self-Clinching Fasteners (anchor panels securely from back)	No. 1. For use with all products, except 3/8″. No. 2. For use with 3/8″ only. 100 No. 1 fasteners per package, sufficient for applying 175 sq. ft. of board; 50 No. 2 fasteners per package.			For applying Upson Board, Upson Artwal, or Upson Fibre-Tile. Fasteners nailed to furring or other rigid surface. Prongs clinch wallboard from back of panel (see illus.) eliminating nail heads and holes in centers of panels.
Upson Cement (waterproof)	1 gallon cans; 1 or 2 cans to case 1 gallon will apply approximately 100 sq. ft.			A waterproof cement, for applying panels of Artwal to wall, and for sealing around tub in bathroom installations.





Above, view of cut-back, intersecting moulding, and ornament with lugs, being assembled. Lower, moulding and ornament assembled. No visible joints

One of many available ceiling designs in which Upson Board is applied over joists (or directly over plaster, in old construction.) Duplex mouldings conceal all wallboard joints and ornaments conceal moulding intersections

Upson invisible fasteners secure wallboard panels from the back, eliminating nail heads, nail holes, and puttying

MEMORANDA

BALSAM-WOOL

- HEAT INSULATION
- SOUND DEADENING

NU-WOOD

- INTERIOR FINISH
- LATH • SHEATHING
- ROOF INSULATION

WEYERHAEUSER FOREST PRODUCTS

WOOD CONVERSION COMPANY • SAINT PAUL, MINN.

10
33

BALSAM WOOL SEALED INSULATION

DESCRIPTION

Balsam-Wool is a flexible type of insulation. It is made from new wood fibres chemically treated to resist fire, rot, termites and vermin. The fibres are permanently processed into a fleecy mat which is manufactured to a controlled uniform density of 2.2 lbs. per cubic foot. Ninety-two percent of its volume is dead air. It is completely enclosed on both sides and edges with heavy, flexible, asphalt saturated and coated kraft liners.

Balsam-Wool is the practical equivalent of pure sheep's wool in insulation value. Its high efficiency is permanently assured by its exclusive sealed feature and its foolproof application method.

THERMAL CONDUCTIVITY

Balsam-Wool provides a high degree of resistance to the passage of heat. Tests made in laboratories show that the thermal conductivity of Balsam-Wool is as low as that of any other insulation used in building construction.

	Density	Mean Temperature	Conductivity	Resistivity	Authority
Balsam-Wool	4.8[1]	35	.25	4.00	Rowley
	3.62[1]	70	.246	4.06	Peebles

[1]Including asphalt coated kraft liners.

MOISTURE-PROOF

The fibres of Balsam-Wool are water-proofed by a special treatment in the manufacture and individual fibres are made non-absorptive.

In addition, Balsam-Wool is double-sealed with a liner of tough, durable kraft, saturated and coated with asphalt to provide the utmost in moisture protection.

WINDPROOF

The durable kraft liners of Balsam-Wool are windproof. When the insulation is securely fastened in place at edges and ends, air does not pass through or around it.

FIRE RESISTANT

Balsam-Wool will not support combustion. The mat is chemically treated to resist fire. It will char while exposed to flame, but will not smolder or burn after the flame is removed.

PERMANENT

Balsam-Wool is designed to be moisture, fire, wind, vermin, termite and rot resistant. The mat consists principally of cellulose. When installed in wall, ceiling, or roof construction it cannot sag, settle, or disintegrate.

New Type Balsam-Wool Spacer Flange Fits Tightly Against Side of Stud—Is Fastened to Stud Face. Assures Air Spaces Front and Back

DENSITY, WIDTHS AND THICKNESSES

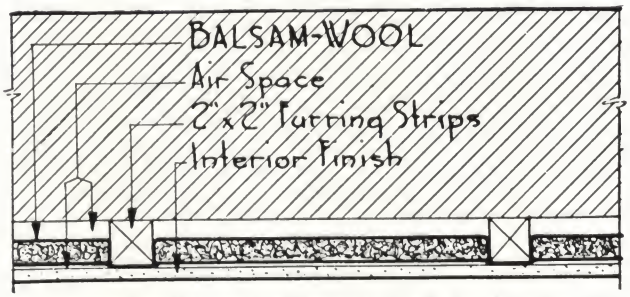
Density—Balsam-Wool Mat 2.2 lbs.
Thicknesses—½ in., 1 in., and Wall-Thick.
Widths—(½ in., and 1 in.) 12, 16, 20, 24 and 33 in.
(Wall-Thick) 12, 16, 20, and 24 in.

LOW COST OF INSTALLATION

The five standard widths meet all average construction requirements. The carpenter cuts only to length. Turn-outs at ends are covered with fibre coats furnished with the insulation and nailed to sills, plates or headers. Its flexibility makes it easy to fit into angles and around corners without waste. In its light, blanket form, it is easy and quickly installed.

BALSAM-WOOL APPLICATION DETAILS

MASONRY WALLS



Fur masonry walls vertically with 2 x 2 in. furring strips set 16 in. o.c., shimmed plumb and true and substantially secured. Apply continuous strips of Balsam-Wool between furring, with side flanges lapped over the face of the furring strips. Tack through flange for temporary fastening, until held permanently with solid plaster base or interior finish. Ends of insulation shall be fastened to sills, plates or headers with fibre cleat. Where splicing of Balsam-Wool is necessary, ends shall be fastened to the face of a 2 x 2 in. header cut between the furring strips.

BALSAM-WOOL APPLICATION DETAILS

Frame Walls, Ceilings, Floors and Roofs

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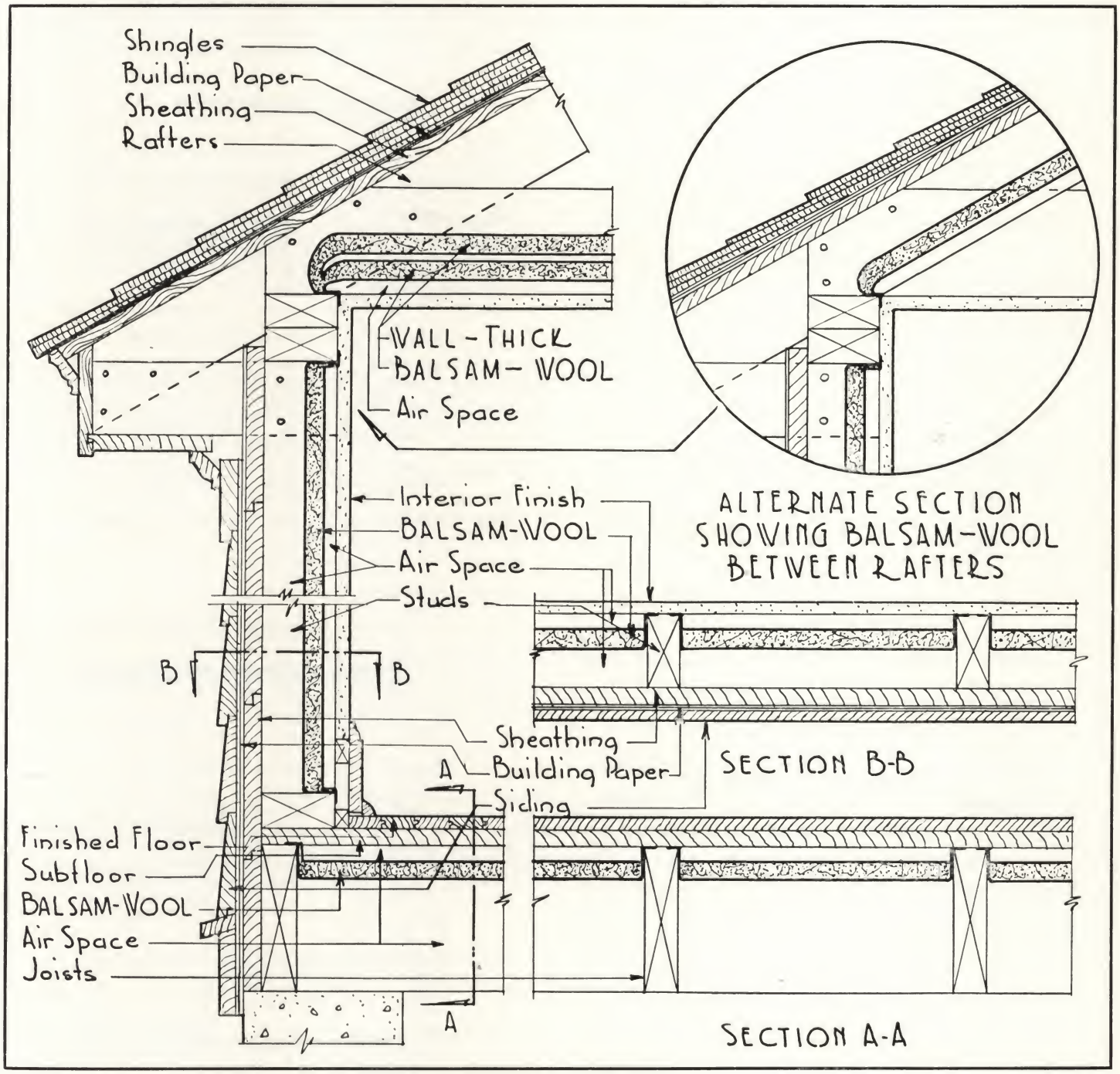


SPECIFICATION DATA

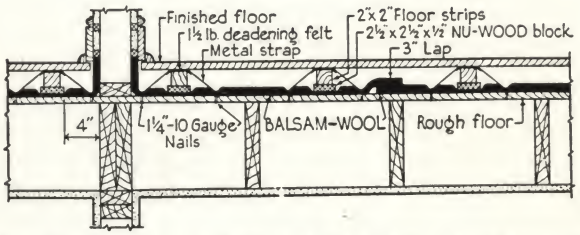
Apply continuous strips of Balsam-Wool parallel with framing members, with the spacer flange* lapped over the inside edge or face of the members. Tack or staple through flange for temporary fastening until held permanently with plaster base, interior finish, or flooring. If the interior is not to be finished, apply wood strips over the edge of the framing and nail securely through flanges to form a continuous air-tight joint. Turnouts at ends shall be covered with the fibre cleat furnished with the insulation, and nailed to sills, plates, or headers. Remove a portion of the mat of Wall-Thick Balsam-Wool to make fastening at ends easier.

Where splicing of Balsam-Wool strips is necessary, ends shall be fastened as turnouts to a 2 x 4 inch header, cut between the framing members.

*Patent applied for.

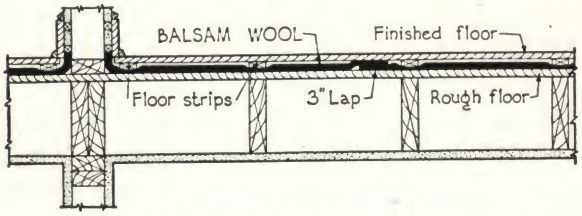
10/33 BALSAM-WOOL SOUND INSULATION APPLICATION DETAILS

FLOOR CONSTRUCTION



Method No. 1—Balsam-Wool Floor Deadening System

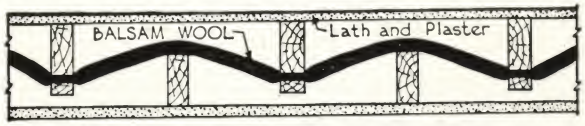
This method requires accessories, consisting of Nu-Wood Blocks and strips of deadening felt with metal straps, which are packaged for convenience. Apply ½ in. or 1 in. Balsam-Wool (33 in. in width) over entire subfloor. Place Nu-Wood Blocks and 2x2 in. furring over Balsam-Wool and cover furring with deadening felt. With a sound blow embed Nu-Wood Blocks in the Balsam-Wool and secure furring in place by nailing straps to subfloor. Apply finish floor to furring.



Method No. 2—Modified Treatment

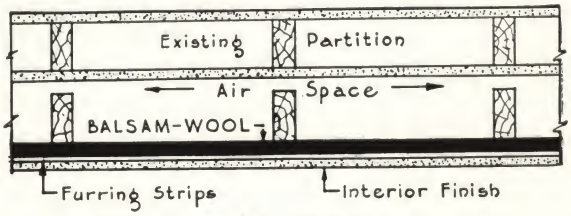
Apply ½ in. or 1 in. Balsam-Wool (33 in. in width) over entire subfloor. Place 1x2 in. or 2x2 in. furring strips, 16 in. o.c., over Balsam-Wool and nail to subfloor. Apply finish floor to furring.

WALL CONSTRUCTION



Method No. 1—New Construction

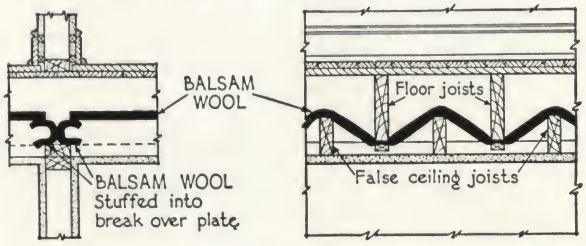
Construct partition wall of staggered 2x4 in. studs, placed on 2x6 in. plate—each set of studs 16 in. o.c. Pad plates with Nu-Wood or Balsam-Wool. Weave ½ in. or 1 in. Balsam-Wool (33 in. in width) between studs and secure to one set of studs. Avoid open joints between strips of insulation. Apply interior finish to both sides of partition.



Method No. 2—Old Construction

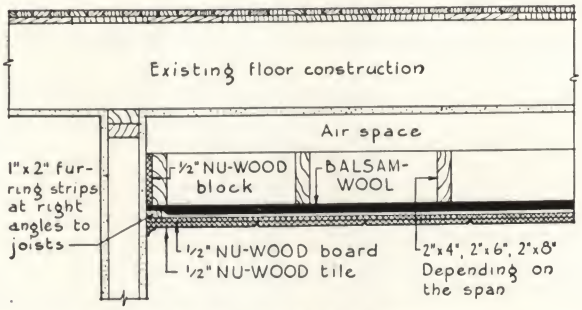
Erect partition of 2x4 in. studs on 2x4 in. plate, placed at least 1 in. from existing wall. Pad plates with Nu-Wood or Balsam-Wool. Apply ½ in. or 1 in. Balsam-Wool (33 in. in width) over entire wall surface. Avoid open joints between strips of insulation. Apply 1x2 in. or 2x2 in. furring at right angles to wall studs as nailing base for interior finish.

CEILING CONSTRUCTION



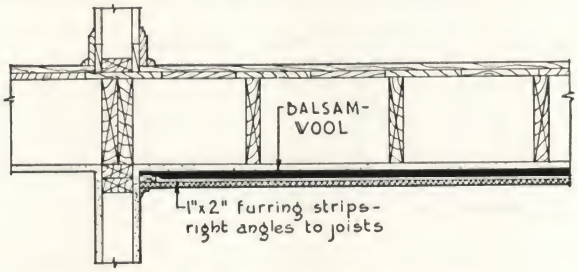
Method No. 1—New Construction

Construct false ceiling over entire area to be deadened. Support false ceiling with staggered set of joists, with bottom edge at least 2 in. below floor joists. Joists supporting floor and those carrying ceiling to be entirely independnt of each other. Weave ½ in. or 1 in. Balsam-Wool (33 in. in width) between joists and secure to bottom edge of floor joists. Avoid open joints between strips of insulation. Apply interior finish to false ceiling joists.



Method No. 2—Old Construction

Install false ceiling joists at least 2 in. below existing ceiling and secure to wall plates. Pad wall plates with Nu-Wood or Balsam-Wool. Apply ½ in. or 1 in. Balsam-Wool (33 in. in width) over framing members. Avoid open joints between strips of insulation. Apply 1x2 in. or 2x2 in. furring over Balsam-Wool as nailing base to receive interior finish.



Method No. 3—Old Construction

Apply ½ in. or 1 in. Balsam-Wool (33 in. in width) over entire existing ceiling. Avoid open joints between strips of insulation. Nail 1x2 in. or 2x2 in. furring over Balsam-Wool as base to receive interior finish.

(For Further Information on Sound Insulation, See Wood Conversion Company Insulation Handbook)

NU-WOOD INTERIOR FINISH

GENERAL DESCRIPTION

Nu-Wood is processed wood. Clean, new wood is separated into individual fibres which are assembled under pressure to form an insulating board of many uses. This board is used as Nu-Wood Insulating Interior Finish, Nu-Wood Board, Nu-Wood Insulating Lath, Nu-Wood Insulating Sheathing and other Nu-Wood products.

Nu-Wood Interior Finish is installed over framing, furring, or continuous surfaces in new or old construction to take the place of lath and plaster, or over wall and ceiling surfaces of plaster, masonry, or wood in old construction. It needs no painting or decorating. The soft shades and interesting surface texture give Nu-Wood rooms unusual decorative effects. Yet Nu-Wood does more than decorate, it insulates against heat and cold. It hushes noises. It does all these things in one operation.

Nu-Wood Interior Finish is furnished in several color selections and in a variety of sizes. Each unit is provided with edges which experience has shown to be the best suited for carefully designed interior finish application.

Nu-Wood fulfills all the requirements of Federal Specifications LLL-F-321a Insulating Fibre Board. In order to meet these specifications the product must have certain qualities with respect to conductivity, transverse strength, deflection, tensile strength, linear expansion, and water absorption.

THERMAL CONDUCTIVITY

The thermal conductivity as determined by Professor J. C. Peebles, Armour Institute of Technology, expressed in B.t.u. per hour per sq. ft. per degree difference in temperature per inch of thickness is .324 at a mean temperature of 72 degrees F.

SOUND ABSORPTION

Tests by the U. S. Bureau of Standards on Nu-Wood applied directly to a plastered surface have established the following sound absorption coefficients:

Table 1—Sound Absorption

Frequency	128	256	512	1024	2048	4096	Noise Reduction Coefficient†
½″ Nu-Wood	.12	.19	.30	.40	.40	.51	.30
1″ Nu-Wood	.14	.19	.37	.37	.41	.56	.35

†The noise reduction coefficient given in the table is the average to the nearest multiple of .05 of the coefficients for 256, 512, 1024, and 2048 cycles.

When applied to furring strips, an increase in sound absorption efficiency will result.

LIGHT REFLECTION

Light reflection tests have been made with average results reported as follows:

Table 2—Light Reflection

Color	Reflection Factor
Tan	40%
Variegated	38%
Ivory	65%

COLOR

The colors in which Nu-Wood Interior Finish is available may be described as follows:

Tan is a neutral shade much the color of dry sand.

Variegated is the name applied to an assortment of colors in which Nu-Wood Tile and Plank are furnished. The colors consist of various shades of rich tan with a slight peach tint. Each package of Variegated units contains a complete assortment of shades, which when applied, blend harmoniously with each other. Each unit has a distinct uniform color. The shades of Variegated are not furnished individually.

Ivory is an off-white shade sometimes called bone white.

NU-WOOD INTERIOR FINISH PRODUCTS

NU-WOOD BOARD

Description: Square edge structural board available in Tan or Ivory, both of which colors harmonize with any scheme of decoration and furnishings. One side has a smooth screen finish—the other an attractive texture.

Uses: Nu-Wood Board is used as interior finish on walls and ceilings in both old and new construction. Joints may be handled by beveling and butting the edges, see V-slice cut Fig. 10, page 8, or with overlays of Kolor-Trim Molding, Nu-Wood, wood or metal moldings, see Fig. 11, page 8, and Fig. 12, page 8. In addition to its uses as interior finish, Nu-Wood Board has many other uses in construction where an insulating material having structural strength is desired—in summer cottages, farm buildings, temporary buildings, etc.

Thicknesses and Sizes: Full ½ inch thick. Thicknesses up to 2 inches in multiples of ½ in. are available. Sizes are 4 feet wide by 4, 5, 6, 7, 8, *8½, 9, 9½, 10, and 12 feet long.

***These sizes not carried in stock, but can be furnished.**

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NU-WOOD INTERIOR FINISH PRODUCTS

NU-WOOD TILE

Description: Rectangular tile units with attractive textured surface are available in Tan, Variegated, and Ivory colors. All four edges are provided with bevel-lap joints, see Fig. 1.

Fig. 1. Cross Section Through Tile Joint

Uses: Laid in various patterns and in combination with other units of Nu-Wood Interior Finish such as Nu-Wood Board, Plank, Wainscot and Kolor-Trim.

Thicknesses and Sizes: Full ½ inch and 1 inch thick. Sizes are *6x6, *6x12, *8x8, *8x16, 12x12, 12x24, 16x16, 16x32, *16x48, *18x32, *18x48, 24x24, and 24 inches x 48 inches.

NU-WOOD PLANK

Description: Plank units in various widths and lengths with attractive textured surfaces are available in Tan, Variegated, and Ivory colors. Long edges are furnished with beaded bevel-lap joints, see Fig. 2.

Fig. 2. Cross Section Through Bevel-Lap Plank Joint

Uses: Particularly well adapted for wall treatment with or without Nu-Wood Wainscot and as ceiling treatment between beams and over other areas where lengths can be limited to 12 feet or less.

Thicknesses and Sizes: Full ½ inch and 1 inch thick. Widths are 6, 8, 10, 12, and 16 inches. Lengths are 6, *7, 8, *9, 10, and *12 feet. Each width and length is packaged individually.

NU-WOOD WAINSCOT

Description: Same composition as other Nu-Wood units except surface has a specially treated hard finish. Color is light mahogany brown, texture is non-repetitive and has a distinctive effect simulating weathered wood. Side edges have ship-lap joints, see Fig. 3. Ends are square cut.

Fig. 3. Cross Section Through Wainscot Joint

Uses: Because of the hard surface, this product is particularly well adapted for lower wall areas and for walls subject to abuse.

Thicknesses and Sizes: Full ½ inch thick. Available in 2 and 4 foot widths and in 3, 4, and 5 foot heights.

**These sizes not carried in stock, but can be furnished.*

KOLOR-TRIM MOLDINGS

Description: Kolor-Trim pre-decorated wood moldings are designed to bring out the full beauty and color harmony of Nu-Wood Interior Finish. Made of Ponderosa Pine, these moldings are finished in a semi-gloss enamel in three designs. Pattern No. 1 Reversible Cove, No. 2 Chair Rail, No. 4 Bead, in a variety of colors.

Uses: Kolor-Trim has many uses. For design suggestions see Fig. 5, page 7. Cove molding is reversible and is finished in the same color on both sides. Cove can be applied at the intersection of walls and ceiling, as inside and outside corner treatment, and in many other applications where a large molding of either convex or concave shape is desirable.

Chair Rail is used as a chair rail at the joint between Nu-Wood Wainscot and upper wall treatment, as baseboard, and for window and door casings.

Bead is used principally as a joint treatment. It may be applied directly to the surface of Nu-Wood or as a shadow joint treatment in which the edges of the Nu-Wood Board are recessed, see Fig. 12, page 8. Bead may be used to decorate and protect inside and outside corners, see Fig. 6. When several Kolor-Trim Bead moldings are grouped to form a chair rail or other decoration, interesting color combinations can be produced.

Table 3—Kolor-Trim Moldings

Description	Pattern	Size	Colors
Kolor-Trim Cove Molding, painted both sides. Reversible.	No. 1	2″ x 2″	No. 10 Tan No. 20 Green No. 30 Ivory
Kolor-Trim Chair Rail Molding	No. 2	⅝″ x 2¾″	No. 10 Tan No. 20 Green No. 30 Ivory No. 40 Brown
Kolor-Trim Bead Molding	No. 4	¼″ x ¾″	No. 10 Tan No. 20 Green No. 30 Ivory No. 50 Vermilion No. 60 Gold

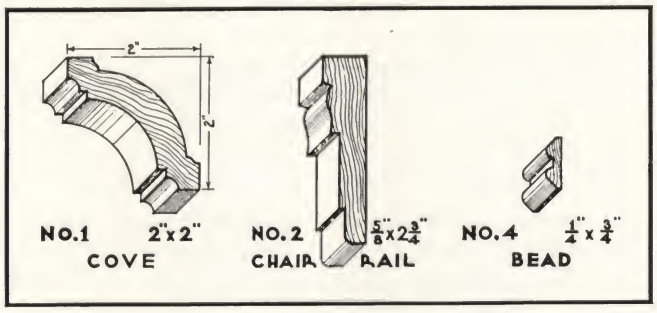

Fig. 4. Color Trim Moldings

NU-WOOD INTERIOR FINISH PRODUCTS

Application Suggestions: Since Kolor-Trim Moldings are pre-decorated, mechanics should handle them with clean hands—avoiding rubbing and scuffing. Moldings should be applied with finish nails or casing nails, driven in grooves or offsets where they will be least noticeable. Heads should be set slightly below surface. Material is furnished with Kolor-Trim for touching up nail heads and cut ends. Kolor-Trim Enamel, for use in painting other surfaces to match, may be obtained from Nu-Wood dealers.

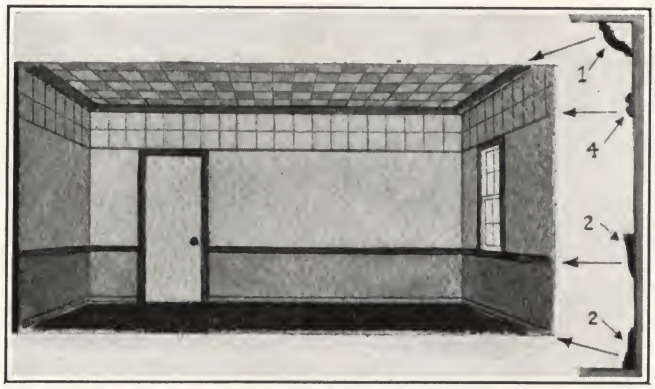

Fig. 5. Design Suggestion, Using Kolor-Trim Moldings

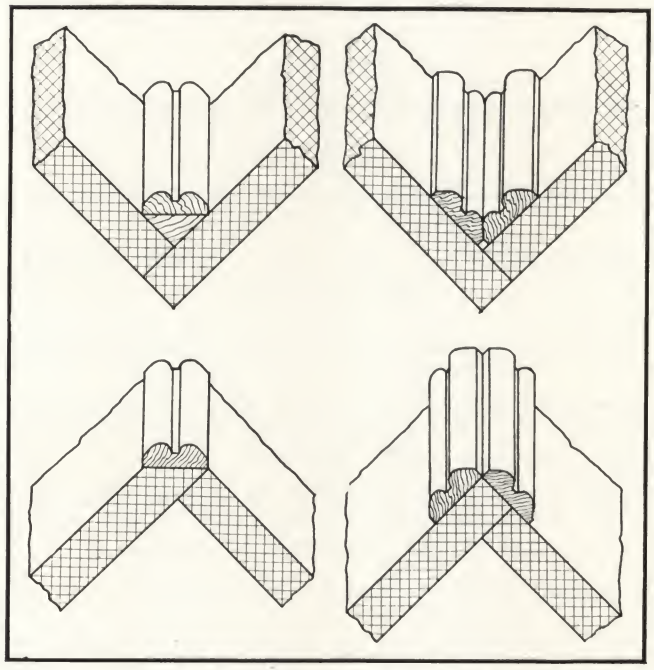

Fig. 6. Corner Treatments with Kolor-Trim Beads

NU-WOOD ORNAMENTS AND FRIEZES

Description: Specially designed ornaments and friezes to be used in combination with other Nu-Wood Interior Finish units are furnished in ornamental tile with beveled square edges (D-14, D-7 and D-8), rosettes (A-1, V and G), corner pieces (21, 23 and 22), and friezes (1, 2, 3, 4 and 5). For thickness and sizes see Fig. 7. The frieze designs are ½ in. x 3 in. x 32 in.

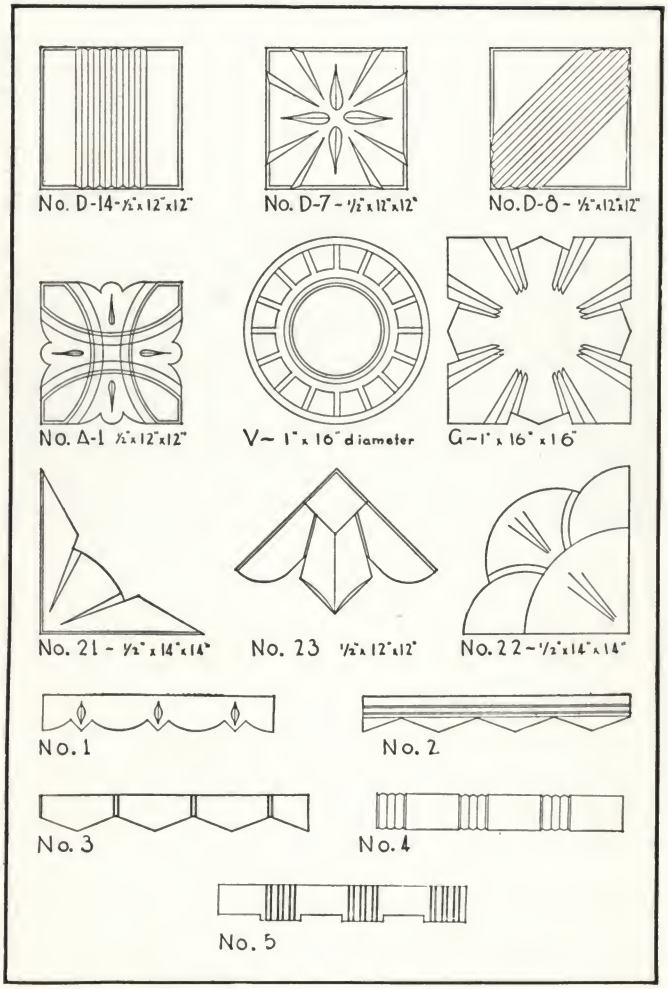

Fig. 7. Nu-Wood Ornaments and Friezes

NU-WOOD MOLDINGS

Description: Nu-Wood Moldings are accurately fabricated from Nu-Wood board and are furnished in Tan color. Exposed surfaces are smooth finish.

Thickness and Size: Full $\frac{7}{16}$ inch thick, unless otherwise noted—all 8 feet long, see Fig. 8.

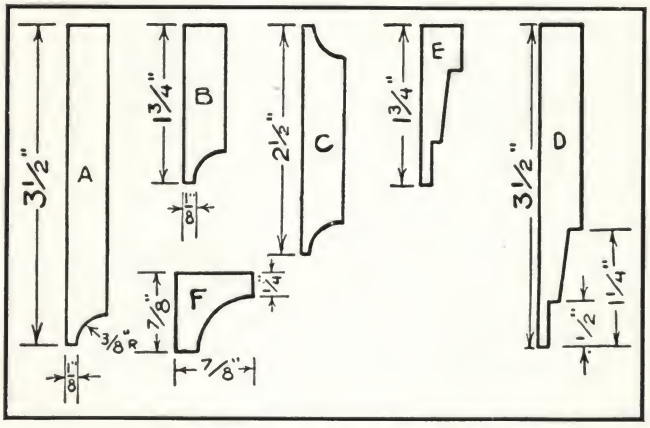

Fig. 8. Nu-Wood Moldings

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NU-WOOD INTERIOR FINISH PRODUCTS

GROOVING AND BEVELING TOOLS

Nu-Wood Board can be cut with an ordinary saw or it can be cut and grooved in interesting designs and molding treatments made on the job by carpenters with the aid of beveling planes made for this purpose. One such plane is the Bevil-Devil, Fig. 9, and typical cuts are shown in Fig. 10. A special tool, Bevil-Devil No. 101 is also available. It is designed specifically for rabbeting or recessing the edge of Nu-Wood Board to receive Kolor-Trim Bead as a joint treatment—see Fig. 12. The square or beveled recessed cuts, as shown in Fig. 12, can be made at a depth of ⅛ inch, $\frac{3}{16}$ inch or ¼ inch in one operation. Bevil-Devil tools can be obtained from Nu-Wood dealers.

Fig 9. Grooving Nu-Wood Board with Bevil-Devil

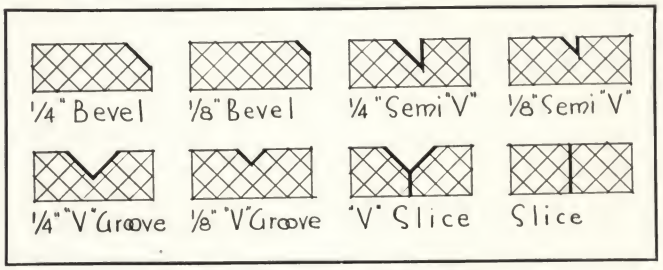


Fig. 10. Typical Bevil-Devil Cuts

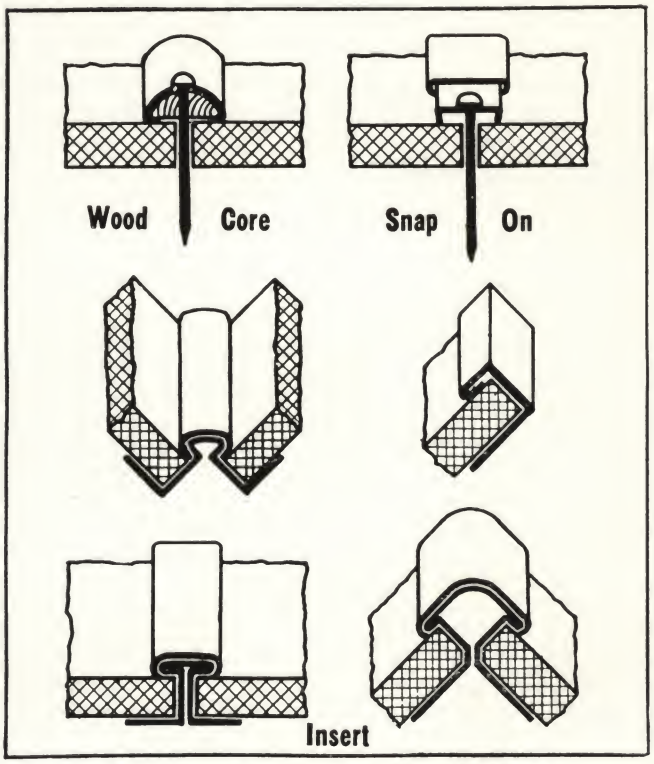


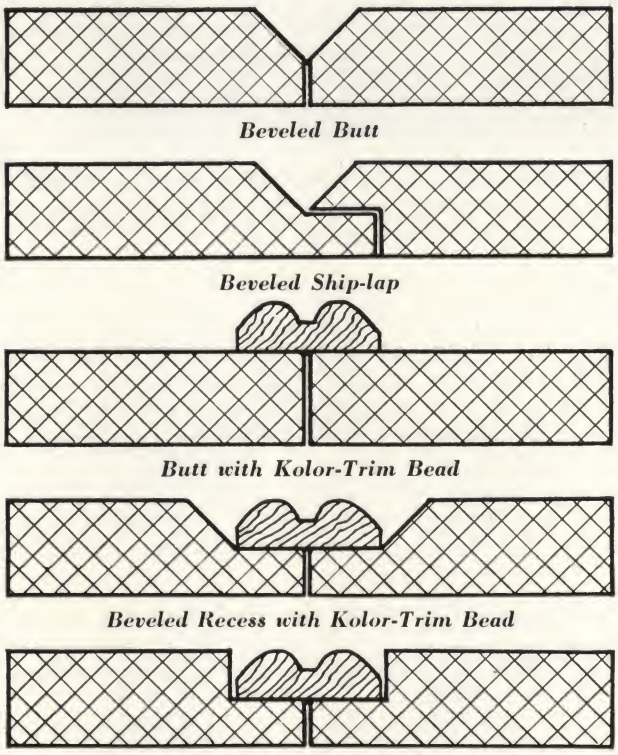
Fig. 11. Three Types of Metal Moldings

ADHESIVE

Adhestik, a special adhesive, is recommended for applying Nu-Wood Interior Finish. Covering capacity is approximately 80 square feet per gallon. It is available from Nu-Wood dealers in one and five gallon cans.

METAL MOLDINGS

Metal moldings, furnished by several manufacturers, offer a modern decorative trim. They are used extensively for protection at openings and corners, as well as to create modernistic designs for entire wall and ceiling surfaces.



Beveled Butt

Beveled Ship-lap

Butt with Kolor-Trim Bead

Beveled Recess with Kolor-Trim Bead

Square Recess with Kolor-Trim Bead

Fig. 12. New-Wood Board Treatments

In general, metal moldings are of three types: (1) wood core, (2) snap-on, (3) insert, see Fig. 11.
These moldings are made of chromium plated metal, stainless steel, solid aluminum, brass, copper and bronze. Bright mirror or satin velvet finish may be had on most metals.

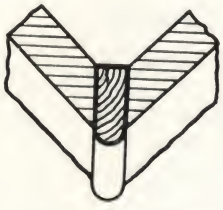


Fig. 13. A simple outside corner treatment made on the job from wood strips

DIRECTIONS FOR APPLYING NU-WOOD INTERIOR FINISH

No. 1—APPLICATION TO CONTINUOUS SURFACES

Nu-Wood Interior Finish may be applied to continuous surfaces such as plaster, Nu-Wood Insulating Board, Semi Tuff-Wood, plasterboard, plywood, wood sheathing, masonry, etc., with brads or nails (providing the backing surface is a good nailing base), or with a special adhesive known as Adhestik or a combination of Adhestik and supplementary bradding.

APPLICATION WITH NAILS

Preparation of Surface

The surface to which Nu-Wood is to be applied with nails must provide a secure anchorage and must be solid and true. If the surface is not solid or if it is not a satisfactory nailing base such as metal ceiling, thin wallboard, masonry, unsound plaster, etc., see Application to Framing or Furring, page 11, or Application with Adhesive at bottom of this page.

Application

Tile and Plank: Galvanized wire brads are recommended. In general, 1¼ inch No. 17 brads are recommended for ½ inch Nu-Wood; 1¾ inch for No. 15 or No. 16 brads for 1 inch Nu-Wood. Approximately 4 pounds of 1¼ inch brads are required per thousand square feet of Nu-Wood. Brads of other lengths may in some instances be more desirable, depending on the hardness, rigidity or thickness of the nailing base. Shorter brads, for instance, may be better suited for hard plaster.

The number and position of brads required for the various size Tile are given in Table 4. When nailing Plank, space the brads approximately 6 inches apart at the long edges. Occasional bradding at the center of 12 and 16 inch width plank is desirable.

Nail through the surface of the Tile or Plank, ***not in bevel or bead.*** Drive nails at an angle to the surface—reverse the angle of half the nails. Set nail heads below surface with properly gauged hammer blow or with nail set.

Wainscot and Board: If nails are to be exposed, use brads and follow instructions for Tile and Plank. Nails should be spaced from 4 to 6 inches around the edges of the unit and every 10 to 12 inches apart over the remaining area. Start nailing at the center and work toward edges. If nails are to be covered with Kolor-Trim Moldings, surface coating or other treatment, ordinary nails with heads may be used. In these instances 1¼ inch coated or bright box nails or galvanized (small head) shingle nails are recommended for ½ inch Nu-Wood; 1¾ inch length for 1 inch Nu-Wood.

APPLICATION WITH ADHESIVE

Preparation of Surface

The surface to which Nu-Wood is to be applied with Adhestik should be solid, clean and true, free from dirt, grit or other impurities. Whitewash, calcimine or wall paper should be completely removed and paint or varnish surfaces should be thoroughly scratched to insure intimate contact between the adhesive and the base. If the surface is greasy, it must be washed clean with proper solvent.

Over Plaster: Plaster surfaces must be sound. Loose or chalky spots should be patched as required. If plaster is badly cracked or broken, wood furring strips should be installed to furnish solid base, see Application to Framing or Furring, page 11. Surfaces of rough or sand finish should be scraped to remove loose particles.

When new plaster forms the base for Nu-Wood, it is often feasible to omit the putty or finish coat. In such cases, the brown coat must be troweled to a uniform, smooth surface and applied to give a total minimum plaster thickness of ½ inch. Ample time must be given for plaster to dry and reach its full strength before Nu-Wood is applied. Gypsum plaster is recommended.

It is advisable to test the Adhestik by first applying two or three units as described above. Then carefully pull them off to note the bonding quality between the base and the Adhestik and between the Nu-Wood and the Adhestik. If directions are followed carefully the Adhestik itself will separate, leaving part on the base and part on the Nu-Wood.

After Tile and Plank units have been placed in final position supplementary nailing may be desirable, in which case drive brads at an angle through the surface of Tile directly over the spot or ridge of Adhestik, and set heads below Nu-Wood surface. Supplementary nailing should be used in applying Nu-Wood Wainscot and Board.

(Continued—See Page 10)

Table 4—Nailing Nu-Wood Tile

Tile Size	Location of brad	No. of brads per tile	Approx. lbs. of brads per 1,000 sq. ft. tile
* 6 x 12	1 each corner	4	7
12 x 12	1 each corner	4	3½
12 x 24	4 each long edge	8	3½
* 8 x 8	1 each corner	4	7½
* 8 x 16	3 each long edge	6	4
16 x 16	3 on two opposite edges 3 on center line	9	4
16 x 32	5 each long edge 5 on center line	15	3½
*16 x 48	7 each long edge 7 on center line	21	3½
24 x 24	4 on two opposite edges 4 on center line	12	2½
24 x 48	7 each long edge 7 on center line	21	2½

****These sizes not carried in stock, but can be furnished.***

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DIRECTIONS FOR APPLYING NU-WOOD INTERIOR FINISH

Over Masonry or Concrete: Nu-Wood Tile or Plank can be applied to true and dry masonry or concrete surfaces with Adhestik. Nu-Wood Board and Wainscot should not be applied directly to such surfaces unless supplementary nailing is possible. If base is not satisfactory for nailing see Application to Framing or Furring, page 11.

Other Continuous Surfaces: Nu-Wood Interior Finish can be applied to other continuous surfaces such as Nu-Wood Insulating Board, Semi Tuff-Wood, plasterboard, plywood and wood sheathing. Follow manufacturers recommendation for nailing the base and spacing of framing members.

Fig. 14. Applying Adhestik

Spreading Adhestik

Always apply Adhestik to Nu-Wood—not to the base. ***With a putty knife work a small amount of Adhestik into the Nu-Wood as a priming coat where dabs or ridges are to be located. This priming assures perfect adhesion between Adhestik and the Nu-Wood. Do not spread Adhestik on Nu-Wood in a thin layer—each dab or ridge must have bulk.***

Tile: Apply Adhestik in spots or dabs approximately 2 inches in diameter and ¼ inch to ½ inch thick, Fig. 14. The exact size and number of dabs are varied with the condition of the surface and the size of the Tile, see Table 5. These dabs should be in the corners of the Tile, along the sides, and over the remaining area. The outside edge of the Adhestik should be kept 1½ inches away from the edge of the Tile.

Plank: Apply Adhestik in narrow ridges approximately 1 inch wide and ⅜ inch thick. On Plank up to and including 12 inches, place two ridges of Adhestik parallel with length of the unit, 1½ inches from edge. The 16 inch unit should have an additional ridge in the center. Exact size and spacing of ridges will vary with the condition of the surface and the size of the Plank.

Wainscot and Board: Apply Adhestik in narrow ridges approximately 1 inch wide and ⅜ inch thick. Ridges should be approximately 10 to 12 inches apart. The exact size and spacing of ridges will vary with the condition of surface and size of Wainscot or Board unit.

Application

After dabs of Adhestik have been applied, place Nu-Wood in its approximate final position, Fig. 15. Slide back and forth for a distance of about ¾ inch under uniform pressure of the hands to obtain good contact. If the surface of the unit is below the level of adjoining pieces, do not pull the unit away from the base to bring surface level but remove it and add more Adhestik. Again work into position as described above to obtain correct surface level. ***When applying Nu-Wood units be sure that the Adhestik actually "wets" both Nu-Wood and backing surface.*** Brad or shore the first units on either walls or ceilings to prevent sliding out of position during application of surrounding units. Do not bend Nu-Wood units over high spots. The tendency of the unit to straighten may break the Adhestik bond.

Table 5—Applying Nu-Wood Tile with Adhestik

Tile Size	No. Spots Per Tile	Sq. Ft. Per Gal.	Gal. Per 1,000 Sq. Ft.
* 6 x 12	4	38	24
12 x 12	4	77	13
12 x 24	6	77	13
* 8 x 8	4	34	29
* 8 x 16	4	69	15
16 x 16	4	100	10
16 x 32	6	134	8
*16 x 48	8	154	7
24 x 24	9	103	10
24 x 48	12	154	7

These sizes not carried in stock, but can be furnished.

Fig. 15. Applying Tile with Adhestik

APPLICATION TO CURVED SURFACES

When applying Nu-Wood Tile, Plank or Board to curved surfaces it may be necessary, depending on the radius of the curve, to kerf the back of the unit with a saw or beveling tool cut. The amount of kerfing and depth will depend upon the radius of the curve and should be determined by test on the job. Best practice is to nail or to use Adhestik and supplementary nailing on curved surfaces.

(Continued—See Page 11)

DIRECTIONS FOR APPLYING NU-WOOD INTERIOR FINISH

No. 2—APPLICATION TO FRAMING OR FURRING

PREPARATION OF SURFACE

Nu-Wood can be applied in new and old construction to furring strips (in some cases to framing members) or to continuous surfaces such as plaster, Nu-Wood Board, Semi Tuff-Wood, plasterboard, plywood, wood sheathing, etc., which can be applied over the framing. For instructions covering the latter, see Application to Continuous Surfaces, page 9.

Where the existing wall or ceiling surface is not a satisfactory base for direct application—such as badly cracked or broken plaster, metal ceilings or thin wallboards—furring strip should be used as a base for nailing Nu-Wood. Even in new construction, furring strips are often required to give a level base and the necessary support for the application of smaller units of Nu-Wood Interior Finish.

Furring Strips: Furring strips, 1 x 2 inches, 1 x 3 inches, or 2 x 2 inches, should be cut from straight lumber of uniform thickness. Nail the strips securely to framing or directly over the surface to be covered and shim to a true level plane.

Nailing: Galvanized wire brads are recommended. In general 1¼ inch, No. 17 brads are recommended for ½ inch Nu-Wood; 1¾ inch, No. 15 or 16 for 1 inch Nu-Wood. Approximately 4 to 5 pounds of 1¼ inch brads are required per thousand square feet of Nu-Wood. Brads of other lengths may, in some instances, be more desirable depending on the hardness, rigidity or thickness of the nailing base.

Nail through the surface of the Tile or Plank, ***not in bevel or bead.*** Drive nails at angle to surface—reverse the angle of half the nails. Set nail heads below the surface with properly gauged hammer blow or with nail set.

APPLICATION

Tile: ***Nu-Wood Tile should not be applied directly to framing members. In general, application should be made to furring strips or to a continuous backing.***

Install furring strips at right angles or diagonally to the direction of the framing members, depending upon the design of the Tile pattern. Place furring strips in one direction, parallel to the edges of Tile at a maximum spacing of 12 inches o.c. If Tile is oblong, place parallel with long edges. Place furring so it will support the Tile unit continuously at two opposite edges, Fig. 16. The number and position of brads required for the various size Nu-Wood are given in Table 4, page 9.

Plank: ***Nu-Wood Plank should not be applied directly to framing members. In general, application should be made to furring strips or to a continuous backing.***

Install wood nailing or furring strips at right angles to the direction in which the Nu-Wood Plank is applied. Place the strips 8 to 12 inches o.c. Space brads from 8 to 12 inches apart at long edges of Plank unit, depending on the spacing of the furring strips. Occasional bradding at the center of 12 and 16 inch Plank is desirable.

Wainscot: Nu-Wood Wainscot may be attached directly to framing or furring spaced 12 to 16 inches o.c. Insert headers or furring strips back of chair rail, baseboard, and at joints between adjacent pieces of wainscot. Provide additional support either vertically or horizontally as required, spaced not over 16 inches o.c.

If the nails used in applying Nu-Wood Wainscot are to be exposed, use brads and follow instructions for Tile and Plank. Nails should be spaced 4 to 6 inches apart around edges of unit and 10 to 12 inches apart at each intermediate framing or furring member. Begin nailing at center and work toward edges. If nails are to be covered with Kolor-Trim Molding or other treatment, ordinary nails with heads can be used. In this instance, 1¼ inch coated or bright box nails or galvanized (small head) shingle nails are recommended for ½ inch Nu-Wood; 1¾ inch length for 1 inch Nu-Wood.

Fig. 16. Applying Tile to Furring Strips

Board: Nu-Wood Board may be attached directly to framing or furring spaced 12 to 16 inches o.c. On lower portion of wall insert header or furring strips at chair rail height, back or baseboard, and at intervals between chair rail and baseboard as required. Provide support at all edges of each Nu-Wood unit.

If the nails used in applying Nu-Wood Board are to be exposed, use brads and follow instructions for Tile and Plank. Nails should be spaced 4 to 6 inches apart around edges of unit and 10 to 12 inches apart at each intermediate framing or furring member. Begin nailing at center and work toward edges. If nails are to be covered with Kolor-Trim Molding or other treatment, ordinary nails with heads can be used. In this instance, 1¼ inch coated or bright box nails or galvanized (small head) shingle nails are recommended for ½ inch Nu-Wood; 1¾ inch length for 1 inch Nu-Wood.

PAINTING, DECORATING AND CLEANING NU-WOOD

The natural color and texture of Nu-Wood Interior Finish provides a pleasing appearance without decorative treatment. However, if other effects are desirable, Nu-Wood can be treated as easily as any plaster or wood surface. The proper preparation of the Nu-Wood surface and application of the finish are essential, therefore the following suggestions are offered:

APPLICATION OF OIL OR VARNISH PAINTS

To secure maximum coverage, it is advisable to size or seal the natural surface of Nu-Wood before oil or varnish paints are applied. Application of the size and finish coat (or coats) should be in accordance with paint manufacturer's specifications. If complete coverage with one size coat and one finish coat is required, the size coat

(Continued—See page 12)

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PAINTING, DECORATING AND CLEANING NU-WOOD

should be tinted with a portion of the finish coat or with colors to the desired shade. In this case, the size should be of the prepared oil or varnish type rather than the water base type.

After the Nu-Wood surface has been properly sized, any high grade flat, eggshell, semi-gloss or glossy paint may be applied.

APPLICATION OF CASEIN PAINTS

Paints of this type are furnished in concentrated paste or powder form and are usually thinned with water. They should be applied directly to unsized Nu-Wood and with careful application one coat is usually satisfactory. Two coats, however, are recommended for best results. These paints are considered washable to a certain degree—that is, they may be cleaned by washing with lukewarm water, mild soap and a soft sponge. Strong cleaning powders should be avoided. Several of the manufacturers claim that their products do not reduce the sound absorption of Nu-Wood appreciably. For the most part, these statements are based on their experience, since few actual laboratory tests are available.

CLEANING NU-WOOD

The ordinary accumulation of dust and dirt can be easily removed from Nu-Wood Interior Finish by brushing the surface lightly with a whiskbroom or by wiping with a dry, clean, untreated rubber sponge, or a combination of both. On large jobs it is advisable to have several sponges on hand so that those not in use can be washed occasionally and thoroughly dried.

An ordinary vacuum cleaner with hose attachment is also satisfactory for cleaning Nu-Wood surfaces.

Wallpaper cleaner does a fair job, however, there is a tendency for the cleaner to rub off in fine particles and a portion of the cleaner to cling to the surface. Therefore, its use may be limited.

The V cut joints between units of Nu-Wood Tile and Plank may be cleaned as outlined above. Further cleaning of joints can be accomplished by sanding with No. 2 sandpaper attached to a block of wood shaped to conform with the bevel angle.

For additional information on decorating Nu-Wood see Nu-Wood Application Book

NU-WOOD INSULATION SHEATHING SPECIFICATIONS

DESCRIPTION

Nu-Wood Sheathing is made from Nu-Wood Board processed to meet the requirements of a covering material for outside walls. Surfaces and all edges are treated with a special waterproofing agent to seal against moisture and vapor penetration. Nu-Wood Sheathing is $\frac{25}{32}$ inch thick, 4 feet wide and 7, 8, 8½, 9, 9½, 10, and 12 feet long.

The thermal conductivity of Nu-Wood, expressed in B.t.u. per hour per square foot per inch of thickness per degree difference in temperature, is .324. Therefore Nu-Wood Sheathing in the $\frac{25}{32}$ in. thickness has a conductance of .415.

Framing: Construction framing to receive Nu-Wood Sheathing shall be spaced accurately 12 inches or 16 inches on centers. Follow the standard recommendations of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all framing. Insert 2 x 4 inch headers to provide bearing for all end joints when not otherwise supported by sills or plates since all edges must be supported.

Application: Apply Nu-Wood Sheathing with the length parallel with the framing members. Apply with exposed face showing markings for nails. Where possible, apply boards of sufficient length to span between sills or plates or other structural members. Center Nu-Wood Sheathing on framing, leaving a space of approximately ⅛ inch between boards around all edges. At window and door frames, bring Nu-Wood Sheathing in close contact with frames.

Nailing: Nail Nu-Wood Sheathing to intermediate framing members first, then around all edges. Use 8d common nails or two inch galvanized roofing nails with ⅜ inch or ½ inch head. Space nails 6 inches apart on intermediate framing. Space edge nails 3 inches apart and ⅜ inch in from edges. Drive nail head flush with surface of board. Proper spacing of nails is indicated by marking on the surface of Nu-Wood Sheathing.

Wood Siding: Apply wood siding directly over Nu-Wood Sheathing, butting joints in siding on center of studs. Nail siding at framing members only with nails of sufficient length to penetrate the framing at least 1 inch.

Shingles: Install 1 x2 wood furring strips over Nu-Wood Sheathing placed at right angles to framing and spaced properly to receive shingles. Nail the wood furring at framing members only with nails of sufficient length to penetrate the framing at least 1 inch.

Stucco: It is desirable to cover Nu-Wood Sheathing with building paper. Then apply self-furring wire or metal lath, nailed through to framing members, with nails of sufficient length to penetrate framing at least 1 inch. If non-furring lath is used, apply 1 x 2 inch wood furring strips vertically over the building paper nailed through to framing members with nails of sufficient length to penetrate framing at least 1 inch. Apply lath to furring strips. Do not apply stucco direct to Nu-Wood Insulating Sheathing.

Masonry Veneer: Install stone or brick veneer in the usual manner, leaving at least ½ inch air space between the masonry and Nu-Wood Sheathing. Nail metal wall ties at framing members only, using nails of sufficient length to penetrate at least 1 inch.

Fig. 17. Large Nu-Wood Insulating Sheathing Units Are Quickly Applied

NU-WOOD INSULATING LATH SPECIFICATIONS

DESCRIPTION

Nu-Wood Lath is made from standard Nu-Wood Board, cut to convenient, easy to handle units 16 inches x 48 inches in size, in either ½ inch or 1 inch thickness. Long edges interlock by means of a simple V-type tongue and groove. Ends are square cut. Nu-Wood Lath has a thermal conductivity of .324 B.t.u. per hour per square foot per inch of thickness per degree difference in temperature. Plaster forms a natural bond with Nu-Wood Lath which exceeds 1,000 pounds per square foot, or several times that of wood lath.

Nu-Wood Lath fulfills all the requirements of Federal Specifications LLL-F-321a for Insulating Fibre Board. In order to meet these specifications, the product must have certain qualities with respect to conductivity, transverse strength, deflection, tensile strength, linear expansion and water absorption.

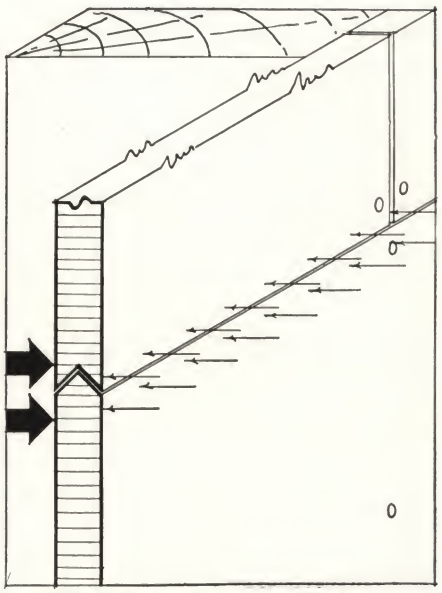

Fig. 18. V-Type Tongue and Groove Resists Trowel Pressure Above and Below Joint Over Entire Length of Lath

APPLICATION

General: Do not moisten lath units before application. Apply lath at right angles to the framing (or furring) members with rough side exposed and V joint "tongue" up. End joint shall center over framing members. Stagger end joints in successive courses. Stagger end joints at juncture of wall and ceiling.

Where cutting is necessary, the lath shall be scored with the point of the lather's hatchet and broken along the scored line. Where piecing out is necessary, use only strips of Nu-Wood Lath so cut that the V joint between units shall span between supports. Accurately cut and fit lath around electrical outlet boxes, piping, etc.

Spacing: Space ends of lath units $\frac{3}{16}$ inch apart. Bring V joint edges to moderate contact.

Nailing: Use No. 13 gauge, 1⅛ inches long, blued special plaster-board nails with $\frac{5}{16}$ inch head for ½ inch thick Nu-Wood Lath. For 1 inch thick Nu-Wood Lath use 1¾ inch length nails.

First nail units to intermediate supports, then nail ends. Space nails approximately 4 inches apart and not closer than ⅜ inch to edges.

Reinforcement: All corners shall be reinforced with standard metal corner beads. All re-entrant angles shall be reinforced with standard expanded metal angle lath strips (cornerite). Reinforcement shall be securely stapled over the Nu-Wood Lath. Cover the center joint in all room ceilings with a strip of metal lath. On all ceilings over 16 feet wide, use two additional strips of reinforcement over joints approximately midway between the center and the walls. Reinforce areas above window and door openings with strips of metal lath. Also provide reinforcement at juncture of lath with masonry or other types of plaster base.

RELATED PROVISIONS

Framing: Construction framing shall be 12 or 16 inches on centers. Follow the standard recommendations of the Building Code Committee of the U. S. Department of Commerce and the National Lumber Manufacturers Association for all wood framing.

Furring: Fur all exterior masonry walls to receive Nu-Wood Lath with 1 x 2 inch furring strips set 12 or 16 inches o.c. accurately shimmed to a true, level plane. Secure substantially to masonry.

Grounds: Furnish and erect, substantially secured to framing members wood grounds to provide for full ½ inch plaster.

Stock window and door frames which provide ¾ inch thickness for lath and plaster should be furred out as required. If special frames are used, they should be detailed to provide for full ½ inch thickness of plaster over the lath.

Plastering: Caution—Do not wet Nu-Wood Lath before applying plaster. Use standard gypsum cement plaster or gypsum wood fibre plaster for scratch and brown coats mixed accurately in accordance with the manufacturer's specifications. Plaster should set in about 1½ hours and not to exceed 2 hours. Use any standard plaster finish over the brown coat, such as gypsum, lime, or lime gauged with gypsum.

Lime plaster or lime gauged with gypsum should not be used for scratch and brown coats.

APPLICATION OF PLASTER

General: Apply in three (3) coats to full ½ inch ground in accordance with the plaster manufacturer's specifications. Surfaces shall be rodded to a true plane. All corners and angles shall be plumb and true. Wherever necessary and particularly on ceilings, provide plaster screeds to insure an even, uniform full ½ inch plaster thickness.

The maintenance of a uniform full ½-inch thickness of plaster cannot be too strongly stressed. Most plaster defects where a fibrous or board plaster base is used may be attributed to a weak, thin plaster coat, inadequate to withstand the normal building strains of shrinkage, settlement, and vibration.

In applying the scratch coat of plaster, this shall be carefully pressed into all joints. If the brown coat becomes stiff and set during darbying, wet down the surface to allow for darbying without undue pressure against the plaster surface. Darby strokes shall be in the direction of framing members with the darby spanning at least two members.

Ventilation: Provide adequate ventilation for the proper drying of the plaster.

Due to the moisture-proof characteristics of Nu-Wood Lath, all plaster moisture must be carried off by the air in contact with the exposed plaster surface.

Heat: Provide adequate heat to prevent injury by frost.

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NU-WOOD ROOF INSULATION SPECIFICATIONS

NU-WOOD ROOF INSULATION

Nu-Wood Roof Insulation is furnished in thicknesses of ½ inch, 1 inch, and multiples of ½ inch in any other practical thickness. The size of the units in the ½ inch thickness is 24 x 47 inches. In thicknesses of 1 inch or more the size is 24 x 48 inches. Thicknesses of 1 inch or more are laminated—the ½ inch layers are bonded together with a continuous coating of asphalt or combination of staples and spots of adhesive. Nu-Wood Roof Insulation laminated with a continuous coating of asphalt is available with offset or flush edges. The stapled product is furnished with offset edges only.

NU-WOOD WRAPPED AND SEALED

Nu-Wood is also available in sealed units which are recommended where a moisture, water and vapor-proofed insulation is required.

Nu-Wood Wrapped and Sealed Roof Insulation is furnished in thicknesses of ½ inch, 1 inch, and multiples of ½ inch in any other practical thickness. The size of the units in the ½ inch thickness is 24 x 47 inches. In thicknesses of 1 inch or more the size is 24 x 48 inches.

General: Roof insulation, to be permanently effective, must be kept dry before, during and after installation. To facilitate this axiom of good construction and enable the roofing contractor to do better and more rapid work, recommendations for Seal Course and Water Cut-Offs are included in the specifications which follow.

Nu-Wood has a thermal conductivity of .324 B.t.u. per hour per square foot per inch of thickness per degree difference in temperature.

Nu-Wood Roof Insulation fulfills all the requirements of Federal Specifications LLL-F-321a for Insulating Fibre Board. In order to meet these specifications, the product must have certain qualities with respect to conductivity, transverse strength, deflection, tensile strength, linear expansion and water absorption.

Seal Course: The Seal Course consists of multiple layers of roofing felt applied over the entire roof deck beneath the insulation. The Seal Course provides protection for the insulation against the penetration of moisture from below, and also acts as a temporary waterproof covering for the entire roof area.

Water Cut-Offs: Water Cut-Offs consist of strips of roofing felt or water-proof fabric and are installed to prevent the spread of moisture beyond certain predetermined areas. They also form certain logical damage-proof stopping points during the roofing installation overnight and weekends.

SPECIFICATION No. 1: Application Over Wood Roof Decks Under Built-up Roofing

A—Prepare Deck

(a)—Inspection: Broom-clean the surface of the roof deck. Roof boards shall be dry, smooth and free from wide cracks and large knotholes. They shall have solid bearing at the ends (unless end matched), and shall be securely face nailed to each bearing with not less than two nails. Drive heads flush with the surface of the boards.

(b)—Cant Strips: When required, cant strips shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc., after the application of Nu-Wood Roof Insulation. Nail cant strips through the insulation to the roof deck.

B—Apply Seal Course

Cover the roof deck with a layer of red rosin sized sheathing paper weighing not less than 5 pounds per 100 square feet. Lap paper 2 inches and secure to the deck by nailing. Then apply two layers of tar or asphalt saturated rag felt weighing 15 pounds per 100 square feet, single thickness, lapping each sheet over the preceding sheet 1 inch more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of coal tar pitch or asphalt to the full lap so that at no point shall felt touch felt. Felt shall be laid without wrinkles or buckles and secured to the deck with occasional nailing. Lap all ends not less than 6 inches. Extend felt up on all vertical surfaces not less than 8 inches.

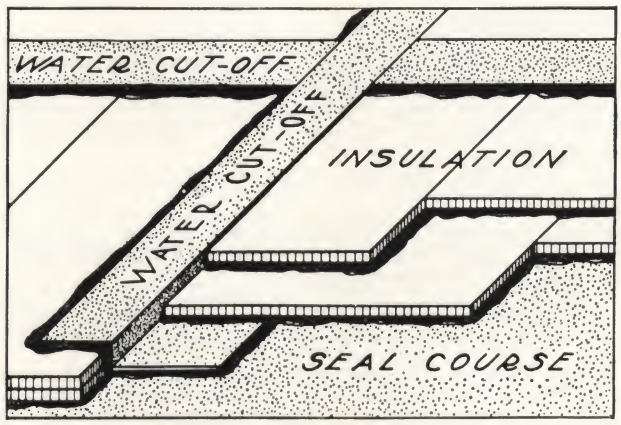


Fig. 19. Placement of Seal Course

After the insulation has been laid over the Seal Course, the turned up 8 inch extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—Provide for Water Cut-Offs

Install "moisture stops" or Water Cut-Offs during the application of the insulation. These cut-offs shall consist of strips of roofing felt or waterproof fabrics 6 to 8 inches wide, thoroughly cemented to the roof, to the edge of the Nu-Wood Roof Insulation, and to the top surface of the insulation. Care should be taken to bring the felt or fabric into intimate contact with the edge of the insulation. Locate these cut-offs approximately 2 feet from and parallel to all vertical surfaces, and around all leader heads, soil pipes, etc. The body or field of the roof shall be divided into areas of approximately 5 or 6 squares, each area isolated with a Water Cut-Off. Insert a Water Cut-Off surrounding each day's work if the stop is not made at the designated Water Cut-Off.

D—Apply Nu-Wood Roof Insulation

Mop the exposed Seal Course with a coat of coal tar pitch or asphalt into which, while hot, embed Nu-Wood Roof Insulation firmly and completely. Lay insulation in parallel courses. Only sufficient area to provide complete embedment of each unit shall be mopped at a time. Bring units to a moderate contact—do not force into place. Where the insulation meets vertical surfaces, such as parapets, penthouses, etc., cut in a neat, workmanlike manner to insure proper joining without forcing. Where multiple layers of Nu-Wood Roof Insulation are applied, lay the units of insulation parallel with those of preceding layers and with all joints staggered in relation to those of

(Continued—See Page 15)

NU-WOOD ROOF INSULATION SPECIFICATIONS

preceding layers. Mop the exposed surface of the first layer of insulation liberally (at least 25 pounds per square) with coal tar pitch or asphalt, and embed each unit of insulation firmly and completely into the hot bituminous mopping. Only sufficient area to provide complete embedment of each unit shall be mopped at a time.

The top surface of the insulation shall be completely sealed and one ply of the finished roofing mopped to the Water Cut-Off at the end of each day's work.

Applicable to Wood Roof Deck Only: Where the incline of the deck exceeds three inches in twelve inches, nail each insulation unit in place with nails of sufficient length to penetrate into, but not through, the roof sheathing. Space nails approximately 12 inches apart o.c. along each edge and along the longitudinal center line. Nail each corner of the unit securely. Nail multiple layers of Nu-Wood Roof Insulation through the top layer only.

E—Apply Roofing

Coat the exposed surface of the Nu-Wood Roof Insulation with hot coal tar pitch or asphalt, and apply roofing in accordance with the manufacturer's specifications.

SPECIFICATION No. 2: Application Over Roof Decks of Poured Concrete or Gypsum, or Roof Decks of Unit Tile or Slab Construction Under Built-up Roofing

A—Prepare Deck

(a)—Inspection: Broom-clean the surface of the roof deck. The surface shall be dry, firm and thoroughly set, free from frost and reasonably smooth without depressions.

(b)—Wood Nailing Grounds: If a nailing base under sheet metal flashing, aprons, flanges, etc., is required, install wood nailing grounds. Such grounds shall be either embedded in or applied to the deck. Grounds applied to the surface of the deck shall be the full thickness of the Nu-Wood Roof Insulation, rigidly secured to the roof construction with a means of attachment as best adapted.

Where the pitch of the deck exceeds three inches in twelve inches, embed wood nailing strips in the surface of the deck parallel with the pitch of the roof, not to exceed 3 feet o.c.

(c)—Cant Strips: When required, cant strips of gypsum mortar, concrete, wood, etc., shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc., before the application of Nu-Wood Roof Insulation. Provide such cant strips with a square nosing equal to the thickness of the roof insulation.

B—Apply Seal Course

If asphalt mopping and asphalt felt are used for the Seal Course, mop the entire deck with asphalt primer. Allow sufficient time to dry. If coal tar pitch and felt are used for the Seal Course, no primer is necessary. In precast tile or slab construction, where the under side of the deck is exposed as a ceiling of the rooms below, it is advisable to spot or strip mop the Seal Course to the deck.

Mop the deck with coal tar pitch or asphalt, and into this mopping, while hot, apply two layers of tar or asphalt saturated felt weighing 15 pounds per 100 square feet, single thickness, lapping each sheet over the preceding sheet 1 inch more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of coal tar pitch or asphalt to the full lap so that at no point shell felt touch felt. Felt shall be laid without wrinkles or buckles. Lap all ends not less than 6 inches. Extend felt up on all vertical surfaces not less than 8 inches.

After the insulation has been laid over the Seal Course, the turned up 8 inch extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—Provide for Water Cut-Offs

See specification No. 1—Section C.

D—Apply Nu-Wood Roof Insulation

See specification No. 1—Section D.

E—Apply Roofing

See specification No. 1—Section E.

SPECIFICATION No. 3 Application Over Steel Roof Decks Under Built-up Roofing

A—Prepare Deck

(a)—Inspection: Broom-clean the surface of the roof deck. The surface shall be smooth, firm, dry and free from rust, grease or loose material. If the weather surface of the steel deck is not factory treated, mop the entire deck with asphalt primer. The deck shall be free from perforations which will allow hot bitumen to drip through, and shall be free from bolt heads or similar projections above the roof surface other than the clips and accessories required to attach the deck to the purlins.

(b)—Wood Nailing Grounds: If a nailing base under sheet metal flashing, aprons, flanges, etc., is required, such grounds shall be secured to the steel deck by a means of attachment as best adapted. The grounds shall be the full thickness of the Nu-Wood Roof Insulation.

(c)—Cant Strips: When required, cant strips of wood, metal, etc., shall be installed at the intersections of roof surfaces with vertical walls, parapets, curbs, etc. If applied before the Nu-Wood Insulation, provide such cant strips with a square nosing equal to the thickness of the roof insulation.

B—Apply Seal Course

Use asphalt saturated felt and asphalt mopping for the Seal Course. Do not use coal tar pitch mopping on steel decks. Where the under side of the steel deck is exposed as a ceiling of the rooms below, it is advisable to spot or strip mop the Seal Course to the deck.

Mop the deck with asphalt and into this mopping, while hot, apply two layers of asphalt saturated rag felt weighing 15 pounds per 100 square feet, single thickness, lapping each sheet over the preceding sheet 1 inch more than one-half the width. Application of felt shall start at low points and be laid at right angles to the slope of the roof. Apply a uniform coat of asphalt to the full lap so that at no point shall felt touch felt. Felt shall be laid without wrinkles or buckles. Extend felt up on all vertical surfaces not less than 8 inches.

After the insulation has been laid over the Seal Course, the turned up 8 inch extensions at all vertical surfaces shall be turned back over the exposed surface of the insulation and thoroughly and firmly embedded in a uniform coat of hot bitumen.

C—Provide for Water Cut-Offs

See specification No. 1—Section C.

D—Apply Nu-Wood Roof Insulation

See specification No. 1—Section D.
If the incline of the roof exceeds three inches in twelve inches, secure the insulation in place with proper devices.

E—Apply Roofing

See specification No. 1—Section E.

BALSAM-WOOL

- HEAT INSULATION
- SOUND DEADENING

NU-WOOD

- INTERIOR FINISH
- LATH • SHEATHING
- ROOF INSULATION

WOOD CONVERSION COMPANY • SAINT PAUL, MINN.

SECTION 10

CONTINUED ⟶

ACOUSTIPULP, INC.

539 So. Clarence Street
LOS ANGELES, CALIF.
REPRESENTATIVES IN PRINCIPAL CITIES

ACOUSTIPULP—OPTIMAL WIDE RANGE SOUND ABSORPTION IN A PERMANENT FIRE-RETARDANT COVERING FOR WALLS AND CEILINGS

Acoustipulp is a plastic material, composed of processed cellulose, fibered asbestos and other ingredients, with exceptionally high efficiency in absorbing and controlling sound. It also possesses high heat insulation qualities.

Serving the same purpose as plaster from a structural and architectural standpoint, Acoustipulp is adaptable to any architectural design. It is also exceedingly light in weight, weighing only 4 lbs. per square yard, thus adding practically no load to the building.

Colors

It can be furnished in a wide range of colors, thereby eliminating further decorative treatment.

Application

Acoustipulp can be applied in old buildings where faulty acoustics exist, as well as in new buildings where proper acoustics are desired. It is less expensive *per unit of acoustical absorption* than any of the acoustic plasters or boards.

Acoustipulp walls and ceilings are fire retardant, verminproof and sanitary. There can be no expansion, contraction or decay. Acoustipulp is as permanent as the wall itself.

Acoustipulp has been scientifically tested and approved (see results on the following page) both for its sound absorption and heat insulating qualities.

But more than that, theatres, hospitals, offices and schools in the United States, Hawaii, and in many countries throughout the world owe their ideal acoustical conditions to Acoustipulp's wide range absorbtivity.

Services

Each room is an individual acoustical engineering problem. ACOUSTIPULP, INC. maintains a staff of highly trained acoustical engineers whose services are available to architects without obligation—to assist in the solution of acoustical problems in all types of buildings.

Write and ask for an analysis of your particular problem.

10 REASONS WHY ACOUSTIPULP IS SUPERIOR AS A SOUND ABSORBER

(1) **Plastic**—Adaptable to all types of architecture.

(2) **High Efficiency**—Wide range absorption provides proper reverberation times at all frequencies.

(3) **High Heat Insulation**—Greater than that of fiberous insulation boards sold for this purpose.

(4) **Low Cost**—Little more than ordinary painted plaster.

(5) **Integral Coloring**—Incorporated in the material, with choice of wide range of distinctive colors.

(6) **Beautiful**—Soft textured, smooth finish.

(7) **Asbestos Base**—Fire retardant.

(8) **Uniform Dependability**—High absorption is not dependent on mode or skill of application.

(9) **Permanent**—Manufacturers warrant against cracking, peeling, hardening, or falling off when applied according to manufacturer's specifications. Never loses its sound absorbing and heat insulating properties.

(10) **Proven Through Use**—In government and private construction in the United States, Hawaii, the Orient, Australia, and many other countries during last seven years.

One of the Acoustipulp Installations in Fox West Coast Theatres, Salinas, Calif.
Architect: S. CHARLES LEE, Los Angeles, Calif.

Acoustipulp Provides Ideal Acoustics and Beauty in the Excelsior Union High School Auditorium
Architect: T. C. KISTNER, Los Angeles, Calif.

Report of Sound Absorption Test on Acoustipulp

Noise and reverberative conditions are not limited to a single frequency but cover a wide band. In selecting acoustical materials, attention should be paid to frequencies other than 512 cycles per second, the commonly used comparative frequency, especially to the lower ones.

Acoustipulp is a highly absorptive material which absorbs low as well as high frequencies. It is one of the few materials whose curve closely approximates the theoretically ideal absorption frequency curve.

Curve A in the accompanying chart is the theoretically ideal curve, recommended by Dr. Vern O. Knudsen, eminent authority on acoustics, for the relative absorption of the boundaries of a room at various frequencies.*

Curve B shows relative absorption of Acoustipulp ¾ in. thick. It is seen to follow very closely the ideal curve recommended by Dr. Knudsen.

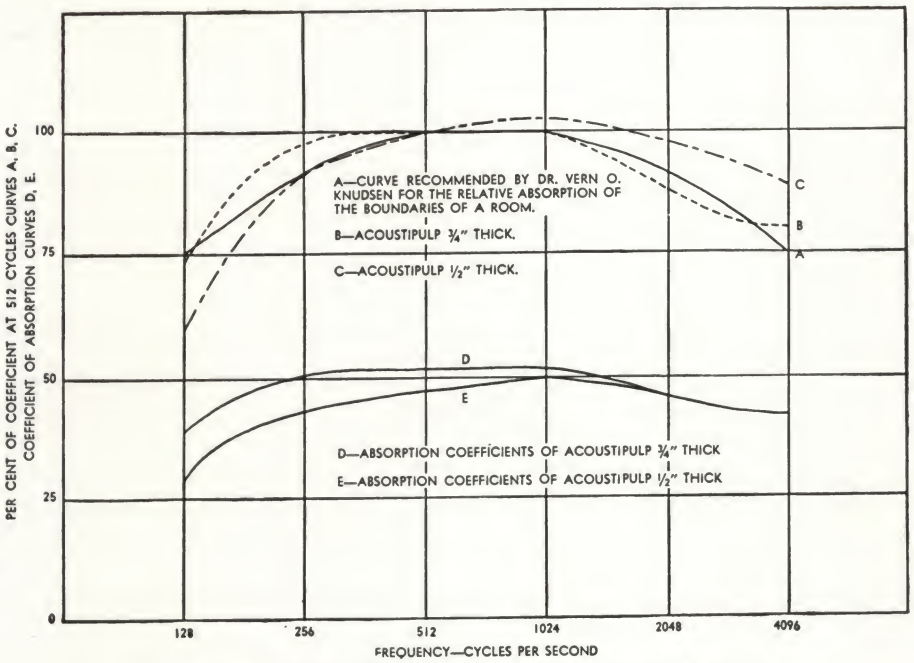
Curve C shows the relative absorption of ½-in. Acoustipulp. This also closely approximates the ideal curve.

Curves D and E show absorption coefficients of ¾ and ½-in. Acoustipulp. High absorption is secured at all frequencies by use of this material.

The results of tests made by Dr. V. O. Knudsen of the University of California at Los Angeles are tabulated below. A copy of this report will be furnished on request.

Frequency of Test Tone	¼ in. thick	½ in. thick	¾ in. thick
128 cycles	.16	.28	.38
256 cycles	.37	.43	.51
512 cycles	.42	.47	.52
1024 cycles	.50	.50	.52
2048 cycles	.46	.46	.46
4096 cycles	.42	.42	.42

Relative Sound Absorption and Coefficients of Acoustipulp



*Taken from ARCHITECTURAL ACOUSTICS by Dr. Vern O. Knudsen.

Heat Insulation Value of Acoustipulp

Plastic Acoustipulp applied to walls and ceilings provides high heat insulation. Tests made by Smith-Emery Company show that Acoustipulp has a conductivity or K factor of .335 which is lower than that of many materials used expressly for heat insulation. Lower conductivity means higher insulation. It thus serves a double purpose in providing comfort. Acoustipulp has approximately 6½ times the insulating value of ordinary plaster.

SUGGESTED SPECIFICATIONS FOR THE USE OF ACOUSTIPULP

Preparation of Base to Receive Acoustipulp — *Over Metal Lath*—A scratch and brown coat of gypsum plaster shall be applied. The brown coat shall be straightened and the entire area closely raked with a sheet metal scratcher having teeth cut in a V shape ½ in. deep and ½ in. from point to point. The raking shall be done immediately after the plaster has been applied and while it is still soft so that deep wide grooves may be made, to provide a strong key.

***Over Concrete, Masonry, or Plaster Board*—**A brown coat of gypsum plaster shall be applied and raked in the same manner as described above. Acoustipulp shall never be applied directly over cement or lime plaster.

Application of Acoustipulp—After the brown coat has become *thoroughly dry*, a ¼-in. coat of Scratch Acoustipulp shall be applied. This coat shall be straightened but need not be raked. The Scratch coat of Acoustipulp shall be allowed to become *thoroughly dry* and the finish coat of Acoustipulp shall then be applied approximately ¼ in. thick and finished as desired. Acoustipulp may be finished smooth, textured, or stippled. Color shall be provided integrally mixed at the plant in the finish coat as selected. If a thicker application of Acoustipulp is desired, a second coat of Scratch Acoustipulp shall be applied and allowed to become thoroughly dry and the finish coat shall then be applied as before.

It is recommended that a 5-ft. wainscot of hard plaster be provided on all walls where Acoustipulp is specified.

Acoustipulp in Old Construction—Acoustipulp may be applied over existing areas where the paint is strongly bonded, by the application of a base coat consisting of 1 part asphalt emulsion (Pioneer Flintkote Brand or Equal) and 1½ parts of fine screened sand. The mix is tempered to the desired consistency with water and is then troweled or brushed over the area on which Acoustipulp is to be applied. As soon as the base coat has become tacky, a ¼-in. coat of Scratch Acoustipulp is applied and allowed to dry thoroughly. The finish coat of Acoustipulp is then applied as for new work.

Acoustipulp may also be applied over existing areas by scoring the old paint and plaster, applying a coat of gypsum plaster and proceeding as with new work.

Acoustipulp Provides Quiet Working Conditions in the Offices of the Coffin-Reddington Company, San Francisco, Calif.

ARMSTRONG CORK COMPANY

Acoustical Materials—Corkoustic and Temcoustic

LANCASTER, PA.

BRANCH OFFICES IN PRINCIPAL CITIES

CORKOUSTIC

Corkoustic is an acoustical cork tile for noise-quieting and acoustical correction in schools, natatoriums, auditoriums, churches, hospitals, offices, restaurants, and stores. It has a distinctive fissured surface that gives travertine-like effects. Made from individual particles of cork, no two units are exactly alike in pattern, thus eliminating mechanical regularity of texture.

High Sound Absorption—Corkoustic 1½ in. thick has a sound-absorption efficiency of 68% at a frequency of 512 cycles, thus preventing excessive reverberation. Its noise reduction coefficient is 50%. For complete test data see Table I, below. It is approved by authorities on sound control.

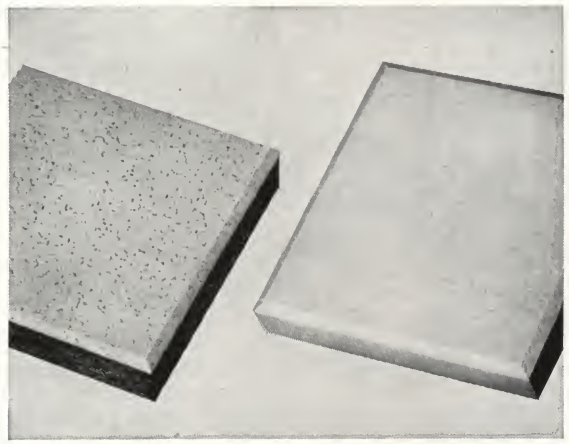
High Light Reflection—The incident light totally reflected from Armstrong's Corkoustic finished with Armstrong's Acoustic Paint ranges from 75% to 80%, depending upon the color selected. This figure is exceptional in acoustical materials.

Thermal Insulation—Corkoustic is a highly efficient barrier against the passage of heat. Its thermal conductance is .18 B.t.u. per sq. ft., per degree temperature difference, per hr., for 1½-in. thickness. This characteristic of Corkoustic is of special value in air conditioned buildings or buildings that will be air conditioned in the future, as well as for uninsulated top stories.

Colors—Armstrong's Corkoustic is furnished factory-painted in white, ivory, and buff with Armstrong's Acoustic Paint (oil base and washable), or in any other colors to order.

Designs—Interesting and individual designs for ceilings and walls may be created with various colors and sizes of Armstrong's Corkoustic. Its decorative possibilities are limited only by the ingenuity of the designer. Suggested designs in color are offered in "Decorative Walls and Ceilings That Quiet Noise and Correct Acoustics." Other designs are offered in "How to Reduce Noise," available upon request.

Cleanliness—Because Corkoustic is cellular, it has no fibres to hang down from the surface to attract or hold dirt. And since it resists the passage of air, dirt cannot filter out upon the exposed surface. Corkoustic does not harbor or attract vermin, germs, or odors.



Left: **Close-up of Corkoustic Showing Distinctive Texture**
Right: **Close-up View of Temcoustic**

Ease of Washing and Repainting—Corkoustic can be cleaned by washing and can be repainted without loss of efficiency. See test data in Table I, below. The average Corkoustic installation does not require cleaning or repainting more than once every six to ten years.

Structural Strength—The structural strength of Corkoustic is adequate to hold the units true and rigid after installation. It is tough, resilient, light in weight, and sufficiently flexible to be bent over slight curves.

Ease of Application—Corkoustic can be applied easily in existing or new buildings by cementing with Armstrong's No. 400 Acoustical Adhesive or No. 306 Waterproof Cement, or by nailing, or by mechanical systems. Its structural strength adds to its ease of application. It can be sawed, cut with a knife or rasp, cemented, or nailed.

Durability and Moisture-Resistance—Due to the remarkable resistance of cork to moisture and temperature changes, Corkoustic does not disintegrate or deteriorate in natatoriums or other high-humidity rooms. It does not shrink, swell, warp, or mould. It is resilient and not unduly fragile.

Fire-Resistance—Tests by University of Pennsylvania, Columbia University, and Massachusetts Institute of Technology indicate that Corkoustic is highly fire-resistant. It does not increase insurance cost on fireproof or non-fireproof buildings.

Weight and Sizes

Weight—Less than 1 lb. per sq. ft.

Sizes—Armstrong's Corkoustic is available in sanded beveled units 1½ in. thick (☆ in. tolerance allowed for sanding).

Field Units—6x12, 9x9, 12x12, 9x18, 12x18, 18x18, 9x24, 12x12, 24x24, and 12x36 in.

Border Units—5⅞x36, 7x36, 9x36, 12x18, and 12x36 in.

Special sizes can be furnished to order; also diagonal half units cut from any regular square field-unit sizes; also Corkoustic moldings in several shapes.

TABLE I—SOUND-ABSORPTION COEFFICIENTS CORKOUSTIC AND TEMCOUSTIC

(Official Tests of Acoustical Materials Association)

Material	Thickness, in.	Sound-absorption coefficients 128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Noise* reduction coefficient	Surface
Corkoustic 60†	1½	.13	.20	.68	.59	.54	.50	Factory-painted, 2 coats oil-base paint
Corkoustic 60†	1½	.14	.21	.68	.62	.53	.50	Same plus 1 coat brushed
Corkoustic 60†	1½	.16	.21	.64	.63	.57	.50	Same plus 2 coats brushed
Corkoustic 60†	1½	.14	.22	.71	.62	.56	.55	Same plus 3 coats brushed
Corkoustic 60†	1½	.10	.22	.73	.62	.54	.55	Same plus 4 coats brushed
Corkoustic 60‡	1½	.19	.41	.60	.51	.53	.50	Factory-painted, 2 coats oil-base paint
Corkoustic 60‡	2	.18	.50	.57	.51	.55	.55	Factory-painted, 2 coats oil-base paint
Temcoustic 50†	⅞	.33	.40	.54	.52	.50	.50	Factory-painted, 2 coats oil-base paint
Temcoustic 50‡	⅞	.47	.50	.39	.44	.49	.45	Factory-painted, 2 coats oil-base paint
Temcoustic†	½	.16	.29	.43	.49	.44	.40	Factory-painted, 2 coats oil-base paint
Temcoustic‡	½	.23	.56	.34	.31	.39	.40	Factory-painted, 2 coats oil-base paint

*Average of coefficients for 256 to 2048 cycles inclusive taken to nearest 5%.
†Applied to solid surface.
‡Applied to furring strips.

TEMCOUSTIC 50

Armstrong's Temcoustic 50 is a low-priced, textured acoustical unit, ⅞ in. thick, with a sound-absorption coefficient of 55% at a frequency of 512. Its noise-reduction coefficient is 50%. It is made from the fibres of long-leaf yellow pine.

It is supplied painted in white, ivory, or buff. Special colors can be had upon request. Temcoustic 50 can be repainted with Armstrong's Temcoustic Paint with only slight loss of efficiency. It does not require constant attention to keep it clean. Accumulation of dirt due to "breathing" is negligible.

Temcoustic 50 is a good heat insulator (thermal conductivity of .31 B.t.u. per sq. ft., per degree temperature difference, per hour, per inch thickness). Its light-reflection value is 75% to 80%, depending upon the color of the paint finish.

Sizes—12x12 and 6x12 in. only, ⅞ in. thick. No half units, border material, or other sizes. However, some beautiful effects can be obtained by using 1⅛-in. thick Corkoustic borders with the ⅞-in. Temcoustic field units.

Installation—Temcoustic 50 can be installed over plaster, concrete, building board, wood, or metal with special Armstrong adhesives. Facenailing is not recommended.

High Humidity Rooms—In rooms of high humidity, such as natatoriums, Temcoustic 50 should not be used.

Half-Inch Temcoustic

Armstrong's Half-Inch Temcoustic meets the need for an acoustical material of reasonable absorption value to be used on jobs where extremely low cost is of first importance. Identical in appearance and finish with Temcoustic 50, this product has a sound-absorption coefficient of 43% at a frequency of 512 and a noise-reduction coefficient of 40%. (See Table I on page preceding.)

Standard colors are white and ivory. Standard sizes are 6 x 12 and 12 x 12 in.

SPECIFICATIONS FOR INSTALLING CORKOUSTIC OR TEMCOUSTIC

Brief Specifications—Armstrong's (specify product) shall be furnished and installed in a design and color to be approved by the architect (or owner) in accordance with standard Armstrong specifications, by a qualified contractor, whose work has been approved by the ARMSTRONG CORK COMPANY.

Note: *Standard specifications for Armstrong's Acoustical Materials are available upon request.*

Preparation of Bases

Plaster—In new construction, the white coat should be omitted, but the brown coat should be true, even, and smooth. All plaster must be thoroughly dry and seasoned throughout. New unpainted plaster should be washed with a 10% solution of zinc sulphate or treated with Armstrong's Wall Size.

In old construction, all plaster must be sound and firm.

All dirt or grease, and any previous covering or finishes (paper, burlap, water paint, whitewash, etc.), must be completely removed. Oil paints or enamel, if judged to be of excellent quality, need not be removed but should be thoroughly scored and cut through to the plaster with a coarse No. 3 sandpaper.

Any cracks or holes should be repaired with patching plaster, which, when dry and hard, should be sanded smooth and level. If old plaster is unduly porous or dusty, apply a size coat of Armstrong's Wall Size.

Concrete—Unpainted concrete should be washed with a 10% solution of zinc sulphate or treated with Armstrong's Wall Size. If concrete is reasonably even and level, preparation is the same as for plaster surfaces. Otherwise, stripping and furring are advisable. 2 x 4's on 36-in. or not more than 48-in. centers should be bolted to the ceiling with the 4-in. face of the timbers parallel to the ceiling line. Expansion bolts or other suitable fixtures on 48-in. centers may be used to anchor the strips. 2 x 4-in. finished and seasoned furring strips on centers not greater than 12 in. should be nailed at right angles and positioned to coincide with the seams between the units and to accommodate the border.

Building Boards—Hard-pressed building boards and boards having a core of plaster faced with smooth cardboard, installed in small sizes (16 x 32 in.), can be used although they are not recommended. Boards of laminated paper pulp (not waterproof) or loose-pressed fibrous boards should not be used. The rough or "wire" side of the hard-pressed board should be turned outward, and the boards well facenailed. If the joists are on centers greater than 12 in., it is necessary to insert cross strips for ample facenailing space.

Joinings between the boards should always be made on the joists and be left open at least ⅛ in. All adjoining edges should be smooth and sanded after nailing. Nails should be driven flush with the face of the board, but without denting. Joinings between the acoustical units should never coincide with joinings between boards.

Wood Ceilings—Existing ceilings of solid wood must be even, tightly nailed, and of such a nature that there will not be undue expansion and contraction. All solid wood ceilings must be of finished lumber with boards having a face no greater than 3½ in. Never apply acoustical units over green or unseasoned lumber or to boards not securely fastened.

Where the ceiling has not yet been installed, or where it is necessary to raze an old ceiling, acoustical units can be applied to 2 x 4-in. finished and seasoned furring strips nailed to the joists (see "Concrete"). Such furring should be leveled.

Metal Ceilings—Acoustical units cannot be applied directly to ceilings of embossed, corrugated, or plain sheet metal. 2x4-in. finished and seasoned furring should be applied over the metal.

Fixtures—In new construction, all wiring, switches, and junction boxes must be permanently installed before applying acoustical units. Fixture canopies, hanging lights, and other portable equipment should be installed after the acoustical units.

Adhesives—Under ordinary conditions, Corkoustic and Temcoustic can be applied to wood surfaces with Armstrong's No. 400 Acoustical Adhesive, and to all other surfaces with No. 306 Waterproof Cement. In high humidity rooms, Corkoustic should be installed with Armstrong's No. 306 Waterproof Cement only. Temcoustic should not be used in such rooms.

LAYOUT, DESIGN, AND TECHNICAL SERVICES

Detailed layouts drawn to scale are advisable for every job. Armstrong's Architectural Service Bureau will furnish these to architects or accredited contractors; also data on mechanical systems, methods of installation, and general information on acoustical problems.

The services of the Armstrong Bureau of Interior Decoration also are available to architects in the preparation of distinctive designs and color schemes for use with Corkoustic or Temcoustic. There is no charge or obligation for any of these services. For further details, complete catalogs, or specifications, write to ARMSTRONG CORK COMPANY, Building Materials Division, Lancaster, Pa.

CALIFORNIA STUCCO PRODUCTS COMPANY

169 Waverly Street
CAMBRIDGE, MASS.

122 East 42nd Street
NEW YORK, N. Y.

Acoustical Plasters
STUCOUSTIC, TYPE A.D. and
STUCOUSTIC, TYPE A.C. for casting.

Other Products
Exterior Cement Stucco, Interior Colored Plasters, Caenstone, Travertime, Colored Floor Finish, Cement Paints.

STUCOUSTIC (TYPE A.D.)—AN ACOUSTICAL PLASTER

For Economical Sound Absorption and Sound Control

Low Cost—Integral Colors—Architectural Adaptability

Description

Stucoustic is unique among acoustical treatments. It is a high sound absorptive plaster which can readily be applied by the skilled artisan. It is composed of permanent materials cemented together to produce a highly fireproof insulative finish adaptable to all architectural conditions.

Stucoustic is generally finished with a steel trowel. With this finish, all particles of aggregate are completely embedded in the body of the plaster, making the surface comparatively smooth, sanitary and high light reflective. It has a light reflection factor of 71%. Stucoustic can also be floated, stippled, textured, antiqued or finished in other ways as desired.

Queens County Courthouse, Jamaica, L. I.
ECCLES & KNOWLES, Architects
JOHN KENNEDY & CO., INC., General Contractor
GALLO & MILONE, Plastering Contractor
11,000 sq. yds. of Stucoustic used on ceilings

Although it is produced in six standard colors, other colors can be produced to meet special requirements. Colors are integrally mixed at the factory and they do not fade.

To meet the demands of effective noise control we offer this attractive economical and permanent plaster, Stucoustic.

Specifications for Stucoustic, Type A.D. Acoustical Plaster

Areas to receive acoustical plaster shall be given a scratch and brown coat in the ordinary manner. The surface of the brown coat shall be rodded and scored or cross scratched for bond and allowed to dry thoroughly before the application of the acoustical plaster.

Note: Where Stucoustic is subjected to high humidity or periodic wetting, no gypsum shall be used in base coats. Use plaster base coats consisting of equal parts by weight of portland cement and hydrated lime and two parts of sand.

Stucoustic Plaster shall be applied to the dry base coat, without sprinkling or otherwise reducing the suction, in coats, about ¼ in. thick, to a total thickness of Stucoustic of ½ in. (or ¾ in. as desired). *Note: A total thickness of less than ½ in. is not recommended.)* The surface shall be finished as directed by the architect and all mixing and application of Stucoustic shall be done in accordance with the instructions of the CALIFORNIA STUCCO PRODUCTS COMPANY and under the direction of their representative.

Application

Regular plasterers apply Stucoustic. It is mixed to the consistency of ordinary mortar and applied to a brown coat of gypsum, portland cement, or lime plaster. One plasterer will normally apply per hour from 8 to 12 sq. yds. of 2-coat Stucoustic finished ½ in. thick.

Painting

Water-mixed paints, sprayed on, are recommended. Test data of Stucoustic spray painted with five coats of water-mixed paint show a reduction of 2% of sound absorption. Painting instructions furnished on request.

Type A.C. for Casting

Stucoustic Type A.C. is for casting purposes; it sets rapidly and produces strong, sharp castings. It can be integrally colored or painted.

Service

Our Service Department will supply complete specifications on request, and a supervisor will be sent to each job to advise as to the preparation of the base coat and proper application of Stucoustic Acoustical Plaster.

SOUND ABSORPTION TEST DATA

Results of tests made by Bureau of Standards are listed below. All samples were applied to gypsum base coat plaster and steel trowel finished.

Stucoustic Type	Thickness, in.	Coefficient of Sound Absorption				
		128	256	512	1024	2048
A.D.	½	.14	.16	.51	.59	.61
A.D.	¾	.18	.36	.65	.65	.62

A Few Stucoustic Jobs and Their Architects

Cancer Hospital, New York; James Gamble Rogers
Winchester Theater, Winchester, Mass.; Charles R. Greco
Community Theater, Morristown, N. J.; Thomas W. Lamb
Dartmouth Hall, Dartmouth College, Hanover, N. H.; Jens Frederick Larson
High School, Glen Cove, L. I., N. Y.; Tooker & Marsh
Physics Building, M.I.T., Cambridge, Mass.; G. T. Richards
High School, Summit, N. J.; Coffin & Coffin
N. Y. Historical Museum, New York, N. Y.; Walker & Gillette
Public National Bank, New York, N. Y.; York & Sawyer
Federal Savings Bank, Manchester, N. H., Thomas M. James Co.

CELOTEX

REG. U.S. PAT. OFF.

BUILDING PRODUCTS

CELOTEX ACOUSTICAL PRODUCTS

ACOUSTICAL PRODUCTS *Section*

« *See* INSULATION *and* ROOFING *Sections* »

THE CELOTEX CORPORATION

919 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

Member of

ACOUSTICAL DEPARTMENT

ACOUSTICAL PRODUCTS BY CELOTEX

REG. U.S. PAT. OFF.

ACOUSTI-CELOTEX

CALICEL CALISTONE VIBRAFRAM ABSORBEX Q-T

The above are trade marks registered in the United States Patent Office by The Celotex Corporation.

These registered trade marks are used to identify the various acoustical correction and sound absorbing products manufactured by The Celotex Corporation.

In the following pages the various trade marks above are used solely in the sense of identifying the various acoustical correction and sound absorbing materials as the products manufactured by The Celotex Corporation or manufactured for and sold by The Celotex Corporation. They are not to be taken as descriptive names of the various products.

Following are the descriptions of these various products:

ACOUSTI-CELOTEX-CANE TILE

A mechanically perforated sound absorbing tile composed principally of cane fibre.

ACOUSTI-CELOTEX-MINERAL TILE

A mechanically perforated sound absorbing tile composed principally of mineral fibre.

CALICEL-TILE

A sound absorbing tile composed of light-weight mineral aggregate and an incombustible inorganic binder.

CALISTONE-TILE

A sound absorbing tile composed of light-weight mineral aggregate and Portland cement binder.

ABSORBEX-TILE

A sound absorbing tile composed of wood fibres encased in and bound together with an incombustible cement.

VIBRAFRAM-UNITS

A tile form, sound absorbing unit made by pressing a specially prepared and fire-proofed felt into a semi-rigid box like shape.

Q-T DUCTLINER

A sheet form sound absorbing element made from mineral fibre with an asphaltic binder.

FOREWORD

BACKGROUND — The Celotex Corporation is the world's largest manufacturer and distributor of acoustical materials. This immense practical field experience in thousands of installations in all types of buildings correlated with the activities of an able Research Engineering Department keeps Celotex Acoustical Service thoroughly up-to-date and of real value to architects.

PRODUCTS—The Celotex Corporation offers not one but a choice of several distinct types of acoustical material of widely varying characteristics in more than 300 individual items as to size and finish. This selection has been made available in order to provide architects with latitude in esthetic expression as well as in absorption efficiencies and methods of application.

They include and comply with every requirement of decorative effect, weight, texture, light reflection, fire-law requirements, maintenance and the solution of other problems.

SALES ENGINEERING AND APPLICATION SERVICE—In every part of the United States there is an exclusive distributor for Celotex Acoustical Products.

These independently owned and operated distributors provide readily accessible and prompt service to architects in the form of acoustical analyses and recommendations with assistance always available from the Headquarters and Field staff of the Celotex Acoustical Department. Competent, dependable information regarding all Celotex Acoustical Products, their proper application and estimates of cost, etc., is promptly supplied. By this policy architects are assured of definite and continuing responsibility of satisfactory results.

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THE ACOUSTICAL PROBLEM

NOISE ABSORPTION—The Celotex Corporation has taken the mystery out of Acoustics. Acoustical correction is a rational engineering science. Celotex acoustical materials are finished product units as they leave the factory and will uniformly provide absorption in accordance with their advertised coefficients.

Noise has been defined as unwanted sound. For the elimination of unwanted sound, Celotex Acoustical Products admirably serve, whether the problem be a school, a hospital, a broadcasting studio, an office, or a restaurant. In recommending acoustical treatment to be used for noise quieting, the competent acoustical engineer will determine at what point the law of diminishing returns makes further expenditure economically unsound.

ACOUSTICAL CORRECTION—Obviously from an acoustical engineering standpoint, there are wide differences between problems in auditoria. The absorption characteristics of the acoustical material, the area to be installed and the location of the material deserve consideration as well as the specific use to which the room is to be put. For example, if two identical auditoria are to be built, one for a Roman Catholic congregation and the other for Christian Scientists, the acoustical recommendations should not be the same, because of the difference in the nature of the services.

In the selection of acoustical material to be used, 25 years of experience proves that many other factors besides absorption efficiency are worthy of the architect's consideration. These include:

Maintenance and Light Reflection—The cost and effect on absorption of conventional methods for renovating wall and ceiling surfaces.

Moisture Resistance—The effect on the acoustical material of continual high humidities as in swimming pools.

Conductivity—Important where the acoustical material is applied on the underside of a roof deck.

Rodent and Vermin Resistance—Particularly important in hospitals and restaurant kitchens, etc.

Resistance to Impact and Abrasion—Important in gymnasia and wherever acoustical material is applied on traffic-bearing wall areas.

COMMON USES—The list of places where acoustical material is used is practically limitless. The following is a partial list of locations where it is most commonly used:

Business Offices
Banks
Educational Institutions
Hospitals
Theatres
Hotels
Churches
Courtrooms
Restaurants
Libraries
Transportation Terminals
Department Stores
Radio Broadcasting Studios

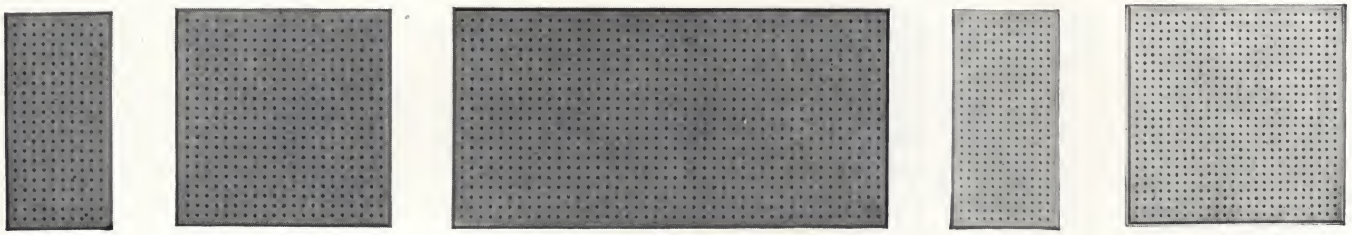
ACOUSTI-CELOTEX

DESCRIPTION—Acousti-Celotex is a light, rigid acoustical tile combining extraordinary sound absorbing efficiency with a durable, smooth finished surface. The face of Acousti-Celotex is perforated to within ⅛ inch of the back of the tile. These perforations (patented) of definite diameter, depth, and spacing act as channels which allow the sound waves ready access to the porous interior of the tile where sound absorption takes place. There are two types of Acousti-Celotex—C—Series (Acousti-Celotex Cane Tile) and M—Series (Acousti-Celotex Mineral Tile), each available in several thicknesses.

PAINTABILITY—The perforations in Acousti-Celotex permit repeated painting with any kind of paint without affecting the sound absorbing efficiency. Paint does not seal the openings to the tubular channels through which the sound waves enter the porous block and are absorbed. This important feature is especially valuable in installations in offices, hospitals, schools, restaurants, etc., where renewable light reflection is of paramount importance.

MOISTURE RESISTANCE—Integrally waterproofed during manufacture, Acousti-Celotex is moisture resistant. It is not, however, recommended for use in rooms where continual excessive humidity exists.

RODENT, VERMIN RESISTANCE—Acousti-Celotex contains no food for rats, mice and other rodents or vermin.



6" x 12" | 12" x 12" | 12" x 24" — Cane Tile

6" x 12" | 12" x 12" — Mineral Tile

CANE TILE C—SERIES

Manufactured from a base of bagasse (the long, tough fibers of sugar cane), Acousti-Celotex Cane Tile has a thin face of high density material laminated to a back of highly absorbent fiber structure. It is perforated with 441 holes per square foot. The patented Ferox Process, used on all Celotex Cane Products, makes the material proof against termites and dry rot.

SIZES—Cane Tile, except Types C-7 and C-8, comes in standard 6 x 12, 12 x 12, and 12 x 24 inch sizes. Special sizes available at additional cost. For specific data see table below.

FINISHES—Acousti-Celotex Cane Tile is made in two finishes—RI (Rolled Ivory) and VHR (Varnished and Hot Rolled). RI is a smooth, light-colored surface affording good light reflection and an attractive appearance. Paint may be applied over RI without sizing. VHR, somewhat harder and smoother than RI is a dark brown color and is especially suited as a base for high quality paint finish.

Optional paint finishes over both are available.

For light reflection qualities of these two basic finishes and variations thereof, see table below.

CONDUCTIVITY—Acousti-Celotex Cane Tile has a thermal value of 0.33 B.t.u. per hour, per square foot, per degree F., per inch thickness.

MINERAL TILE M—SERIES

DESCRIPTION—Made of mineral aggregate pressed with a binder to form a rigid incombustible tile, Acousti-Celotex Mineral Tile is perforated with 676 holes per square foot. It is universally rated as incombustible.

SIZES—Mineral Tile is manufactured in standard 6 x 12 and 12 x 12 inch sizes. Special sizes available at additional cost. For specific data see table below.

FINISHES—Mineral Tile comes in two standard finishes (1) WA (White Asbestos), a smooth, light-reflecting surface, and (2) with flat paint or enamel.

CONDUCTIVITY—Acousti-Celotex Mineral Tile has a thermal value of 0.35 B.t.u. per hour, per square foot, per degree F., per inch thickness.

TYPES OF ACOUSTI-CELOTEX

Type	Thickness (Inches)	Diam. of Perforations (Inches)	Weight Per Sq. Ft. (Pounds)	Standard Sizes (Inches)
C1	½	3/16	0.84	6x12, 12x12, 12x24
C2	5/8	3/16	0.97	6x12, 12x12, 12x24
C3	13/16	3/16	1.03	6x12, 12x12, 12x24
C4	1¼	3/16	1.50	6x12, 12x12, 12x24
C5	13/16	¼	0.95	6x12, 12x12, 12x24
C6	1¼	¼	1.37	6x12, 12x12, 12x24
C7	1	3/16	1.47	12x24
C8†	1	3/16	1.47	24x48
M1	5/8	5/32	1.43	6x12, 12x12
M2	1	5/32	2.12	6x12, 12x12

†*Furnished with tongue and groove joint.*

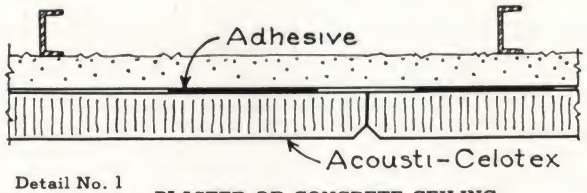
LIGHT REFLECTION FACTORS*

CANE TILE	Diameter of Perforations	
Finish	1/4"	3/16"
RI (Rolled Ivory)	.48	.56
RI plus one coat flat white	.71	.74
RI plus one coat cream white		.72
VHR (Varnish Hot Rolled) plus 2 coats white	.71	.76
VHR plus 2 coats cream white		.74
VHR plus white enamel	.69	.74
VHR plus cream white enamel		.73

MINERAL TILE	5/32"
WA (White Asbestos)	.60
WA plus one coat flat white	.72
WA plus white enamel	.76

**By authority of Curtis Lighting, Inc.*

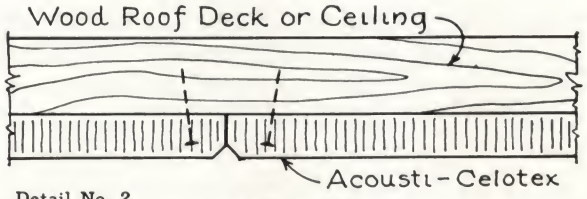
INSTALLATION DETAILS



Detail No. 1

PLASTER OR CONCRETE CEILING

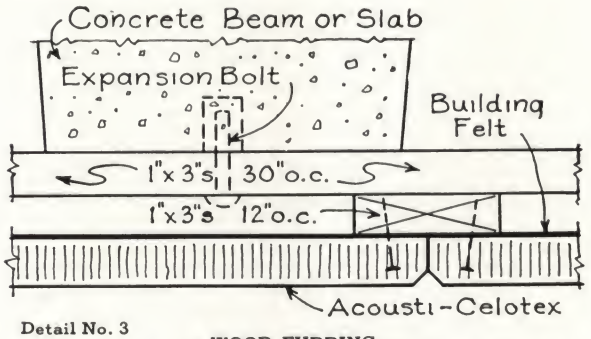
On plaster ceilings Acousti-Celotex is usually cemented (using an approved adhesive) and nailed directly to the plaster. If desired, Acousti-Celotex may be applied with a heavy bodied adhesive alone to plaster or flat concrete surfaces.



Detail No. 2

WOOD DECK

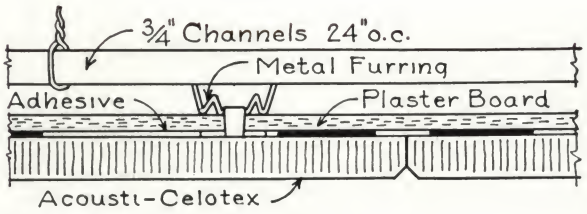
On ceilings of wood, as churches or gymnasiums having an exposed wood roof deck, Acousti-Celotex is nailed directly to deck.



Detail No. 3

WOOD FURRING

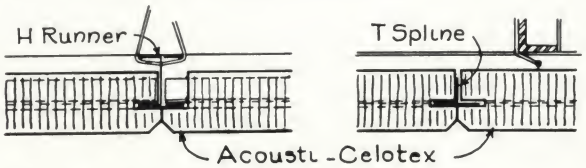
On concrete surfaces or surfaces where it is desired to fur down. 1 x 3-inch wood furring strips may be attached to the concrete with expansion plugs, and Acousti-Celotex is nailed to the furring strips. Ordinarily, a first course of strips 30 inches o.c. is used, to which is nailed a second course 12 inch o.c. to receive 12 x 12-inch tiles. A backing of building felt is used directly behind Acousti-Celotex to prevent "breathing" between joints.



Detail No. 5

PLASTER BOARD CEILING

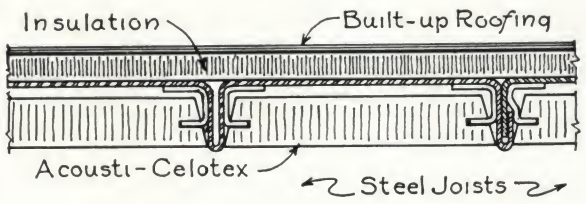
Where a suspended ceiling of lighter and cheaper construction than metal lath and plaster is desired. Acousti-Celotex may be directly fastened to gypsum board held by special suspended plaster board systems. The metal furring should not be spaced greater than 16 inches O. C.



Detail No. 6

METAL SUSPENSION—CANE TILE

Where it is desired to use the Acousti-Celotex as the suspended ceiling by itself, the Celotex metal suspension system may be used, as shown above. Details of this type of construction are available on request.



Detail No. 7

STEEL DECK

Acousti-Celotex Cane Fibre Tile may also be used in combination with steel roof decks to give a combined acoustical ceiling and steel roof deck having high heat insulating qualities. The Acousti-Celotex C-Series has the same heat insulating value as an equal thickness of Celotex. The Acousti-Celotex is cut to fit the steel deck, and fabricated before erection.

SOUND ABSORPTION COEFFICIENTS

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Material	Thickness	Coefficients 128	256	512	1024	2048	Noise Red.Coef.	Surface
ACOUSTI-CELOTEX CANE TILE								
Type C1*	½"	.24	.27	.48	.57	.59	.50	Painted by mfr. with oil-base paint. Perforated 441 holes per sq. ft. 3/16" diam. 3/8" deep.
Type C2*	5/8"	.19	.20	.69	.85	.65	.60	Painted same as above. Perforated same as above ½" deep.
Type C2†	5/8"	.40	.59	.68	.81	.66	.70	Same as above.
Type C3*	13/16"	.25	.27	.76	.88	.60	.65	Painted same as above. Perforated same as above 11/16" deep.
Type C3†	13/16"	.22	.50	.76	.84	.66	.70	Same as above.
Type C4*	1¼"	.37	.43	.98	.79	.57	.70	Painted same as above. Perforated same as above 1-1/16" deep.
Type C4†	1¼"	.35	.60	.98	.80	.54	.75	Same as above.
Type C5*	13/16"	.14	.35	.63	.83	.90	.70	Unpainted. Perforated 441 holes per sq. ft. ¼" diam. 5/8" deep.
Type C6*	1¼"	.19	.41	.91	.92	.92	.80	Unpainted. Perforated same as above 1" deep.
Type C7††	1"	.37	.50	.69	.84	.77	.70	Painted same as above. Perforated 441 holes 3/16" dia. 7/8" deep.
ACOUSTI-CELOTEX MINERAL TILE								
Type M1*	5/8"	.17	.29	.58	.82	.82	.65	Unpainted. Perforated 676 holes per sq. ft. 5/32" diam. ½" deep.
Type M1*	5/8"	.14	.24	.58	.93	.83	.65	Painted with oil-base paint. Perforated same as above.
Type M2*	1"	.15	.34	.88	.95	.77	.75	Same as above.

**Cemented to plaster board, considered equivalent to cementing to plaster or concrete ceiling.*

†Nailed to 1 x 2 in. wood furring 12 in. o.c. unless otherwise indicated. *††Mounted on Celotex Suspension System.*

The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.

For auditorium treatment, attention should be directed to the coefficients at 512 cycles.

CALICEL PRODUCTS

New York Central Passenger Station, Syracuse, N. Y.
Entire ceiling and frieze of Calicel Acoustical Castone

DESCRIPTION — Calicel Acoustical Products — Calicel, Calistone, and Calicel Acoustical Castone—possess the characteristics that have made stone the traditional material for finishing monumental interiors, combining with these characteristics the softening hush of a cushion—sound absorption.

Calicel, basically, is a highly expanded stone. A cellular mineral, it is formed at temperatures in excess of 2,000 degrees F., the molten mass being expanded 10 to 40 volumes during cooling, resulting in a hard porous stone, somewhat comparable in structure to a petrified sponge. Subsequent refining produces finished Calicel, which serves as an aggregate for all Calicel Acoustical Materials—Calicel Tile, Calistone, and Calicel Acoustical Castone.

Calicel aggregate is graded for size, making possible a choice of textures in the finished product.

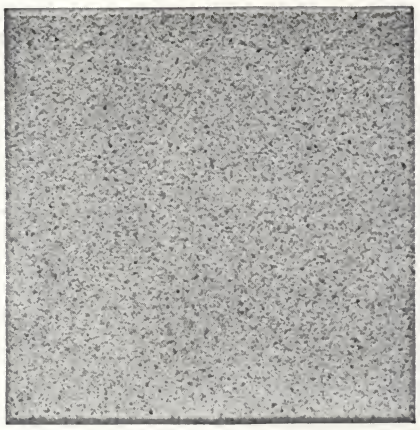
In Calicel Tile, the aggregate is thoroughly mixed with a mineral binder, then moulded with hydraulic presses, after which it is kiln cured.

Calistone is made of selected Calicel aggregates mixed with certain Portland cements, moulded with hydraulic presses and cured in kilns under steam pressure. The resultant stone has the appearance of natural stone, yet possesses high acoustical value.

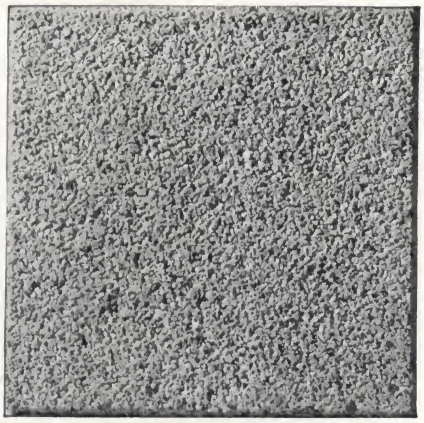
In differentiating between Calicel and Calistone, remember the superior abrasive and wearing strength of Calistone and its superior moisture-resistant qualities, due to the Portland cement binder, which make it ideal for such conditions as swimming pools.

Calicel Acoustical Castone is made, under arrangements with Celotex, by Jacobson and Company, Inc., New York City, nationally known fabricators of cast plaster and interior stone ornaments, and answers the need for acoustical treatment in buildings and rooms demanding rich ornamentation. It is ideal for the formation of intricate coffers and elaborate friezes, panels, and mouldings. The detail is cast with unusual sharpness.

Standard Type



Italian Type



Tapestry Type

CALICEL PRODUCTS — CONTINUED

SIZE—Calicel Tile are made ¾ and 1 in. thick and in standard sizes, 6 x 12 in., 12 x 12 in., and 12 x 24 in. Special sizes can also be provided.

FINISHES—

Calicel Tile—Standard Type—The natural finish is a light buff color of fine texture. This is the standard type and it is available, where higher light reflection is desired, with a factory-applied lacquer finish.

Calicel—Italian Type—This is made of the same fine texture as Standard Type Calicel Tile but contains a sprinkling of dark colored Calicel particles, effective for contrast.

Calicel—Tapestry Type—This resembles the Italian Type in color combination but the surface is coarser in texture.

Calistone—Is available in two standard finishes, Sand Finish Grey (S.G.) and Sand Finish White (S.W.).

APPLICATION—

Calicel—May be applied either by cementing with approved Acoustical Tile Adhesives against plaster or masonry walls or ceilings, or may be mechanically attached by means of a metal suspension system.

Calistone—May be applied to walls by cementing with an approved Acoustical Adhesive or with mortar as in the erection of stone or marble or by means of a metal furring system, depending upon conditions. In the case of ceiling installations, the tile must be mechanically attached. Acoustical distributor should be consulted for definite erection specifications.

In certain types of construction of a monumental nature, it is desirable in the interests of permanence to install structural masonry arch or domed ceilings. Calistone makes an ideal facing material in this type of construction. The thickness of the Calistone can be varied to provide the amount of absorption required for proper acoustical correction.

SOUND ABSORPTION COEFFICIENTS

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Material Thickness	Coefficients					Noise Red. Coef.
	128	256	512	1024	2048	
UNPAINTED						
*Calicel Standard, ¾"	.16	.19	.57	.95	.71	.60
*Calicel Standard, 1"	.20	.29	.76	.97	.79	.70
**Calicel Standard, 1"	.59	.69	.99	.91	.81	.85
*Calicel Tapestry, ¾"	.13	.20	.64	.89	.65	.60
*Calicel Tapestry, 1"	.18	.32	.83	.82	.67	.65
†Calistone 1"	.16	.28	.60	.89	.66	.60
†Calistone 2"	.36	.58	.77	.69	.63	.65
PAINTED BY MFR., OIL BASE PAINT						
*Standard, ¾"	.15	.22	.58	.96	.76	.65
*Standard, 1"	.20	.27	.76	.99	.81	.70

**Cemented to plaster board, considered equivalent to cementing to plaster or concrete ceiling. †Laid directly on laboratory floor. **Mounted over 2" Mineral Wool.*

*The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.

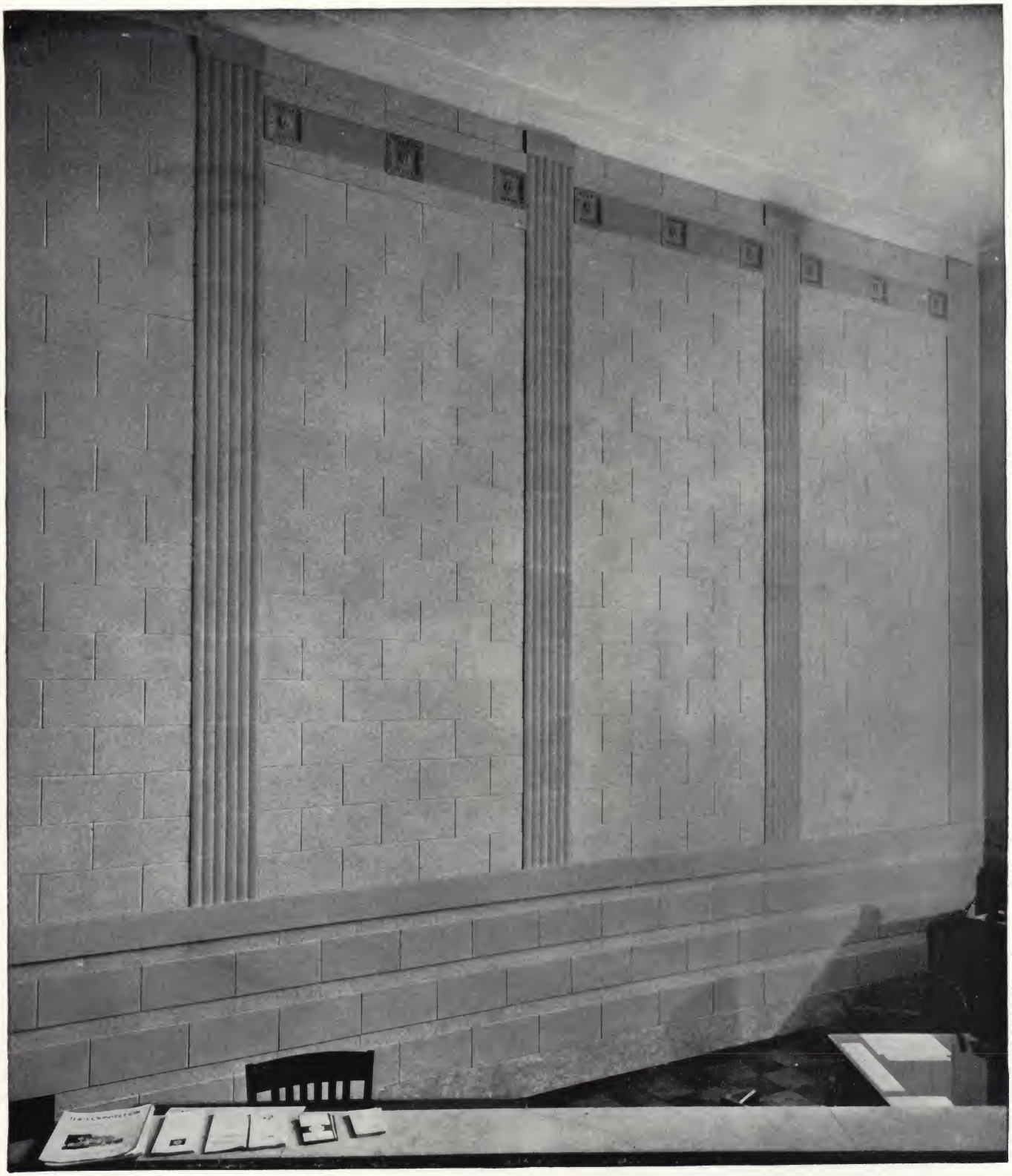
For auditorium treatment, the coefficients at 512 cycles apply.

Calicel Ceiling, Netherland Plaza Hotel, Cincinnati, Ohio

Calicel Castone, Pennsylvania R.R. Station, Newark, N. J.

Rear wall of Court House, Aberdeen, S. D., showing Calicel Acoustical Castone

CALICEL PRODUCTS



In this wall treatment of a modernized bank interior, Calicel Acoustical Products have been used in interesting fashion to accomplish interior finish, decoration, and acoustical correction.

In the dado above the marble base there are alternate courses of Calistone with recessed Calicel, Italian Type, between. Moulded Calicel units form the fluted pilasters, while in the space between the pilasters Calicel Tile of the Standard Type have been laid up. Calicel Acoustical Castone adds an interesting ornamental note, the three units in each wall panel being set in a frieze of moulded Calicel.

VIBRAFRAM
(Formerly Heerwagen Tile)

DESCRIPTION—A radical departure from conventional porous acoustical materials, Vibrafram depends for its sound-absorbing qualities on diaphragmatic action of the individual units. It is a tile 13 inches square, 1½ to 3 inches deep, and is made of fireproofed felt, sized to form plain or ornamented hollow tile shapes, yet soft enough to retain a vibratory quality.

The tile weigh only 3 ounces per square foot.

APPLICATION—Surfaces to which Vibrafram are to be applied, such as concrete, plaster, or wallboard, should be firm, true, and cleaned of calcimine, whitewash or loose paint. Surfaces to be treated are scored and chalk-lined both ways in 13-inch squares.

Waterproof adhesive is then applied to all half-inch margins of the tile, which are then applied and pressed firmly into position.

When Vibrafram is applied to brick walls, cement, or very rough and cracked plaster surfaces which provide an unsatisfactory base for adhesive alone, then the use of furring trellis is recommended.

Information concerning this method will be furnished upon request.

DECORATION — Vibrafram is furnished in three standard tile designs, illustrated on this page. Naturally light cream in color, Vibrafram may be stenciled or otherwise decorated, but the manufacturer must be consulted regarding paints to be used.

A variety of interesting decorative effects can be worked out with study and ingenuity, and in theatre work particularly the unique acoustical results justify the effort required to employ Vibrafram harmoniously in the design.

NOTE: *Vibrafram is not recommended for application to surfaces subject to abrasion or body contact, nor should it be used in rooms where conditions of high humidity exist, as in swimming pools, etc.*

C-5

E-1

C-6

Q-T DUCTLINER
Absorbs Air-borne Sound in all Duct Systems

Because a duct is more or less a "speaking tube", sounds entering it are freely transmitted through the system. Q-T Ductliner is an acoustical material designed especially for duct lining in air conditioning systems to absorb these noises.

COMPOSITION—FIRE-RESISTANT—Prepared in rigid block form, composed of rock wool and a special binder, it will not smoulder or support combustion.

SIZES—Q-T Ductliner is available in one standard size, 24x36 in. and in thicknesses of ½ and 1 in. Weight is approximately 1½ lb. per sq. ft. 1 in. thick.

MOISTURE RESISTANT—Because materials used for lining ducts of air conditioning systems are constantly subjected to humidity, it is vital that the acoustical lining used be moisture resistant. Q-T Ductliner amply satisfies this requirement.

LOW THERMAL CONDUCTIVITY—Q-T Ductliner has a conductivity of 0.30 B.t.u. per hour, per sq. ft., per 1 in. thickness at a mean temperature of 60 degrees F. Not only does Q-T Ductliner provide sound absorption, but also thermal insulation, eliminating the need of thermal insulation to be applied on the outside of the duct.

SOUND ABSORPTION COEFFICIENTS

Frequency in cycles per sec.	128	256	512	1024	2048	4000	NRC	A.M.A. Test
Per cent absorption ½" thick	.35	.25	.54	.75	.76	.66	.60	No. 289
Per cent absorption 1" thick	.43	.37	.69	.78	.78	.70	.65	No. 290

ABSORBEX

Absorbex is a decorative sound-absorbing material available in conventional sized tile or larger units. Its texture is unique, and because of its fire-resisting quality and structural strength it offers an interesting solution for suspended ceiling construction.

DESCRIPTION—It is a cement-timber product, made by shredding timber into long tough fibers and binding them together with an emulsion of high temperature cement. This mass is then formed between rolls and steel belts at about 500 degrees F. into slabs, uniform in thickness, containing millions of minute air cells, affording high insulation, great structural strength, fire-resistance, and superior acoustical value.

TYPES OF ABSORBEX—There are three types of Absorbex—A, C and F—depending on the fineness of the fibers. All three types are strong, not easily fractured, rodent and vermin proof, and inert to temperatures and humidity changes. They can be spray painted with lead and oil paint without noticeable loss of efficiency. They have high light-reflective qualities and are incombustible.

Type A—Furnished in tile form, beveled or unbeveled, 9 x 9, 9 x 18, 18 x 18, and 18 x 36 in. One-inch thickness only. Larger sizes are optional at additional cost.

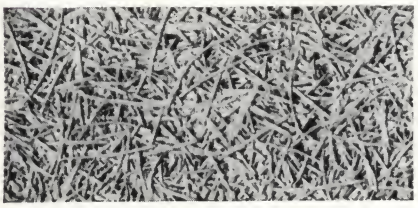
It may be cemented to concrete or plaster backing or applied on furring strips. See table and details for absorption coefficients in installations for various acoustical requirements.

In its natural finish it is light buff in color.

Type C—Furnished only in sheets 20 in. wide by 32, 48, or 64 in. long. Type C is coarser in texture than Type A and relatively more porous. May be placed in concrete forms without mechanical ties, but with suitable form supports.

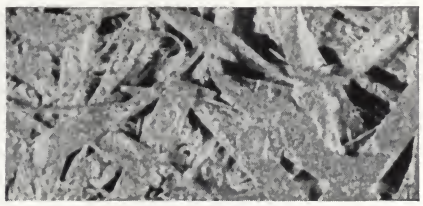
Type F—Furnished in sheets 20 in. wide by 32, 48, or 64 in. long. Coarsest of the three types, Type F has excellent absorption efficiency, high insulation value, fire-resistance, and is economical. Recommended for high-ceilinged structures, such as gymnasiums, armories, auditoriums, etc. It may be satisfactorily placed in concrete forms without mechanical ties, but with suitable form supports.

FLAME TEST—Standard flame tests as required by the Departments of Buildings, New York City, for determining the fire resisting qualities of acoustical materials were conducted by Columbia University on Absorbex. These tests showed that the material does not flame or give off smoke or noxious fumes—thus rating the material fire retardant and permitting its unlimited use in fireproof construction.



Type A Absorbex—Full Size

Type C Absorbex—Full Size



Type F Absorbex—Full Size

SOUND ABSORPTION COEFFICIENTS

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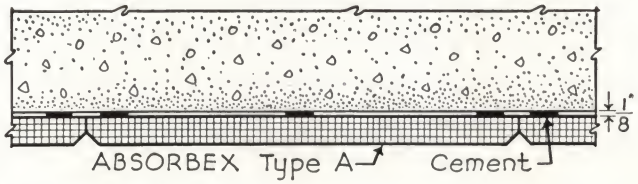
Material	Thickness	Coefficients 128	256	512	1024	2048	Noise Red.Coef.	Mounting
ABSORBEX PAINTED BY MFR., WITH OIL BASE PAINT								
Type A	1"	.18	.26	.63	.96	.77	.65	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type A	1"	.20	.35	.86	.90	.72	.70	Nailed to 1 x 2 in. wood furring 18 in. o.c.
Type A	1"	.32	.50	.95	.96	.80	.80	1 in. Type A spot cemented to 1 in. Type F cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type A	1"	.58	.77	.98	.92	.79	.85	Tile nailed to 1 x 3 in. wood furring 18 in. o.c. and filled in between furring with 1 in. mineral wool.
Type A	1"	.91	.99	.87	.84	.88	.90	Tile nailed to 2 x 4 in. studs 18 in. o.c. and filled between studs with 3½ in. thick mineral wool.
Type A	1"	.54	.96	.90	.95	.85	.90	Cemented to 3" Type F.
Type C	1"	.15	.23	.40	.66	.62	.50	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.
Type C	1"	.21	.27	.48	.63	.54	.50	Nailed to 1 x 2 in. wood furring 16 in. o.c.
Type F	1"	.11	.17	.49	.68	.63	.50	Nailed to 1 x 2 in. wood furring 16 in. o.c.
Type F	1"	.45	.69	.81	.64	.64	.70	Tile nailed to 1 x 3 in. wood furring 18 in. o.c. and filled in between furring with 1 in. mineral wool.
Type F	2"	.21	.44	.85	.70	.72	.70	Cemented to plaster board. Considered equivalent to cementing to plaster or concrete ceiling.

The noise reduction coefficient is the average of the coefficients at frequencies from 256 to 2048 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials for noise quieting purposes as in offices, hospitals, banks, corridors, etc.
For auditorium treatment, attention should be directed to the coefficients at 512 cycles.

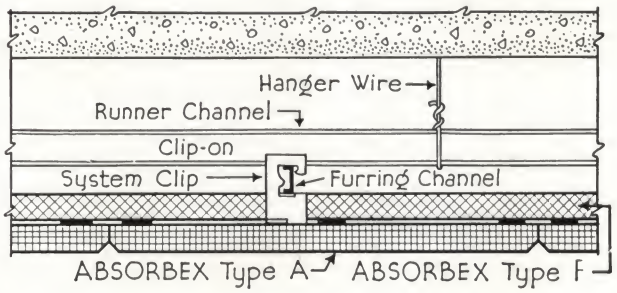
ABSORBEX—Type A
Bowling Alleys, East Liberty Presbyterian Church, Pittsburgh, Pa.
Cram and Ferguson, Archt.

ABSORBEX—Type A
Calhoun College, Yale University—John Russell Pope, Archt.
Application on ceiling between beams

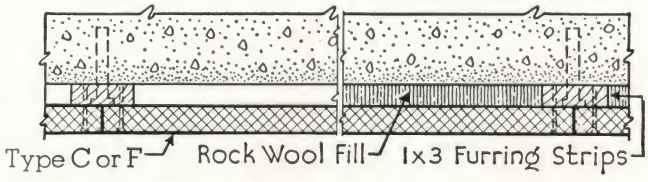
ABSORBEX INSTALLATION DETAILS



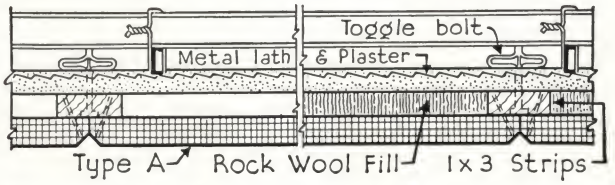
Absorbex Type A—1-in. Beveled Tile, spot cemented to the plaster or concrete ceiling. On plaster ceilings Absorbex is usually cemented (using an approved adhseive) and nailed directly to plaster. If desired, Absorbex may be applied with a heavy bodied adhesive alone to a surface such as concrete.



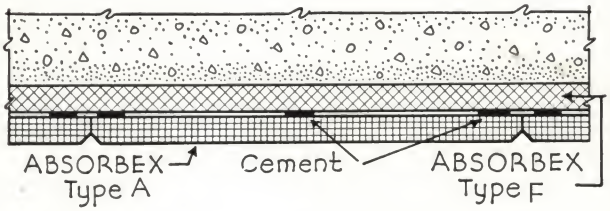
Suspended Ceiling Construction Absorbex Type A—1-in. Beveled Tile when applied to Absorbex Type F (1-in.x20-in.x64-in.) is usually cemented and nailed.



Absorbex Type C or F—(20-in.x64-in.) unbeveled, nailed to 1-in.x3-in. furring strips, bolted to ceiling.

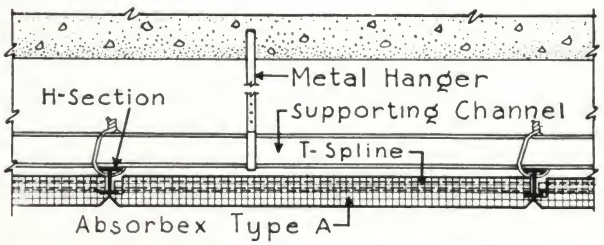


Absorbex Type A—1-in. Beveled Tile nailed to 1-in. x 3-in furring strips toggle bolted to ceiling.



Absorbex Type A—1-in. Beveled Tile, spot cemented to Absorbex Type F (1-in.x20-in.x64-in.).

NOTE: *The Type F material may be laid in the forms at the time the concrete is poured or attached afterwards to the concrete slab with expansion bolts or dryvins.*



Absorbex Type A—Applied on Celotex Suspension System. Where Absorbex is used as the suspended ceiling by itself, it is supported by metal members fastened to suspended metal furring.

CELOTEX

REG. U.S. PAT. OFF.

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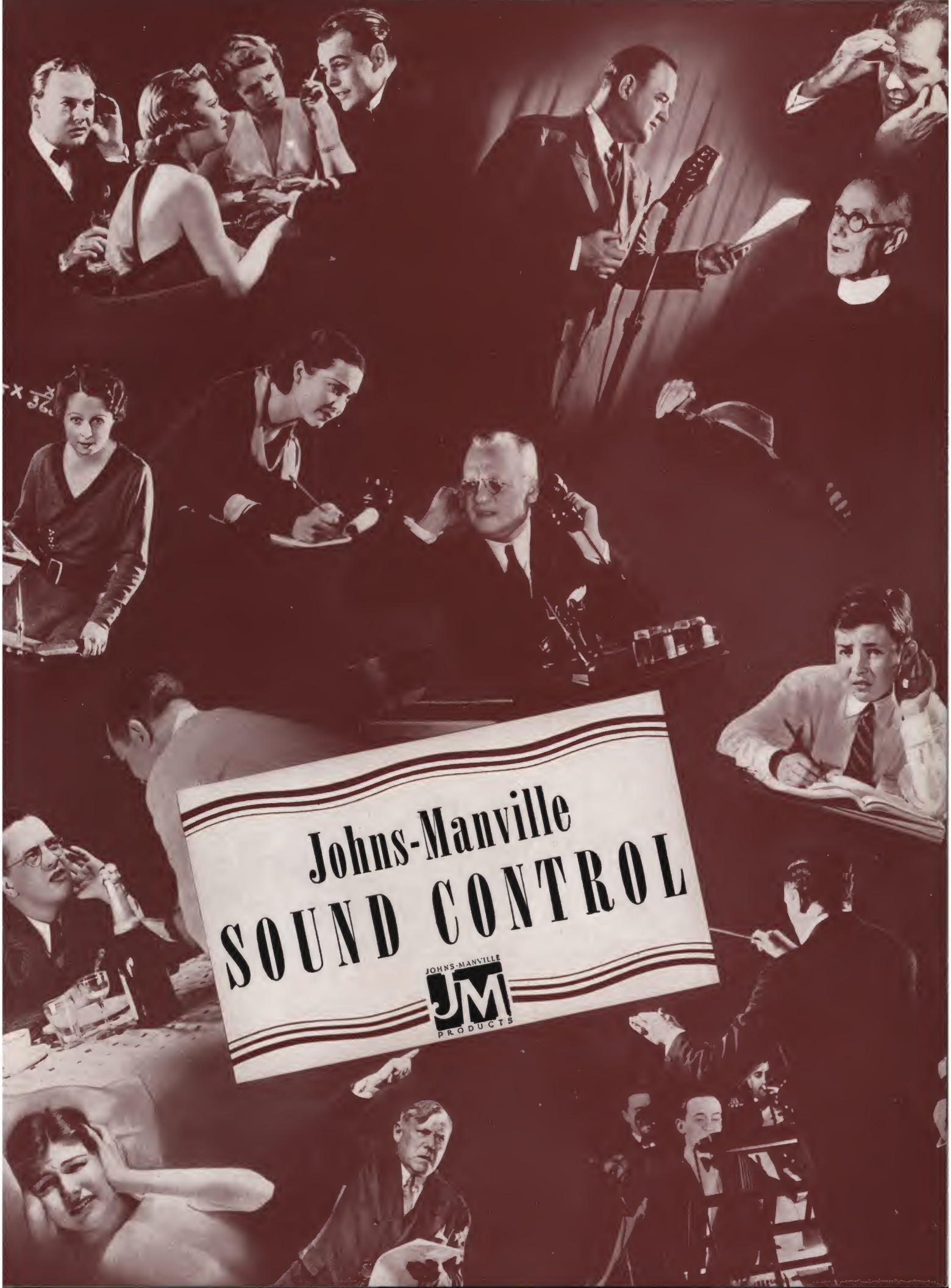
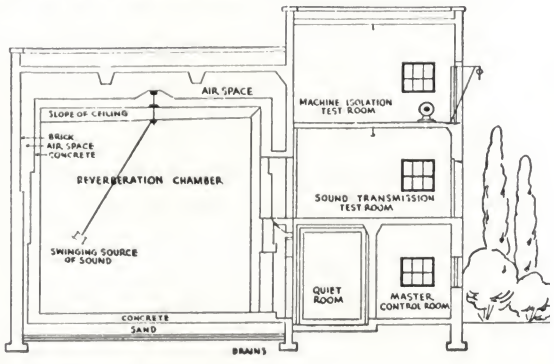
ACOUSTICAL PRODUCTS Section

« See INSULATION and ROOFING Sections »


Johns-Manville
SOUND CONTROL
JOHNS-MANVILLE
JM
PRODUCTS

Where the control of Sound became an exact science—
The J-M Acoustical Research Laboratory

Birthplace of many important contributions to better, more exact control of sound, the J-M Acoustical Research Laboratory is equipped with every modern device to assist the scientist in his work. Above is a scene inside the "Reverberation Chamber" where the sound absorption efficiencies of different materials are carefully determined. At right is shown a cross section of the laboratory.



More than a quarter century of experience and the facilities of one of the world's finest Acoustical Research Laboratories are at your service when you submit your Sound Control Problems to

JOHNS-MANVILLE

PIONEERS IN SOUND CONTROL

LIKE any exact science, the science of sound control is founded on facts. For more than 25 years, Johns-Manville has been gathering facts about sound and the most effective way to control it. In the Johns-Manville Acoustical Laboratory, one of the finest and most completely equipped of its kind, tests are constantly being made which discloses the behavior of sound under all conditions. Here materials have been developed which absorb sound to any desired degree. Methods have been perfected for reducing noise and for controlling and isolating sound within closely prescribed limits.

As a result of this quarter-century program of research and development and an equally broad practical experience, Johns-Manville has been able to eliminate cut and try methods and to provide the scientifically correct solution to virtually any problem involving the control of sound. Some idea of the many distinct acoustical services which J-M is prepared to render may be gained from the two following pages.

To assist the architect in an advisory capacity, Johns-Manville maintains a staff of trained acoustical engineers in the principal cities of the United States and Canada. These men are prepared to make analyses of acoustical conditions in buildings of all types, with specific recommendations for each particular problem, including the selection of the J-M material or method best suited to the job. Their services are available to the architect on this basis at all times, without cost or obligation.

The practical application of J-M Sound Control Materials is handled by a nation-wide organization of J-M Acoustical Construction experts. These men, thoroughly trained in Johns-Manville methods, are equipped to furnish prompt estimates and to handle all details of application.

See back cover for list of offices at which J-M Acoustical Engineers are located.

Member of

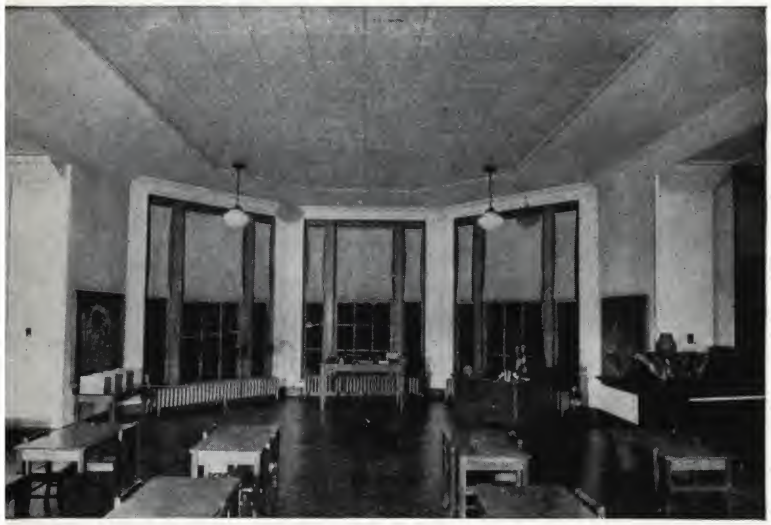
ACOUSTICAL MATERIALS ASSOCIATION

Right: A Johns-Manville Engineer records, by remote control, the result of one of the daily tests made in the "Reverberation Chamber" (shown at left) at the J-M Acoustical Research Laboratory. The technical knowledge gained as a result of this research program is available to architects through a nation-wide organization of J-M Field Engineers.

JOHNS-MANVILLE SOUND CONTROL

In the main office of the Prudential Insurance Co., Newark, N. J., J-M Sound Control has brought welcome relief from distracting noise to hundreds of workers.

A ceiling of J-M Sanacoustic Units meets sanitary requirements and assures restful quiet in the delivery room of the Allegheny Hospital, Pittsburgh, Pa.



This modern kindergarten in the Christian Park School, Indianapolis, Ind., like hundreds of other schools, has been quieted with J-M Sound Control treatment.

Offering the Architect a complete for meeting today's complex

OFFICE QUIETING

Noise is Public Enemy No. 1 of American Business. To get rid of this costly—and unnecessary—nuisance that levies untold tribute in time lost, energy wasted and production slowed up, Johns-Manville offers time-tried materials and methods for overcoming the noise problems of the modern business office. In thousands of busy offices, J-M Sound Control has brought noise completely under control, providing better working conditions and assuring profit-paying quiet. Architects interested in obtaining these advantages for their clients are cordially invited to consult with J-M Engineers.

SOUND CONTROL for HOSPITALS

Hand in hand with the problem of eliminating noise in the modern hospital is the problem of sanitation. J-M Engineers early recognized this two-fold problem, and in developing a system of Sound Control for hospitals, have perfected materials that not only provide effective sound absorbing qualities, but are custom-made for hospital usage from the standpoint of meeting sanitary requirements as well. Readily cleaned and painted, dirt-repelling, and both rot and vermin-proof, these materials are ideal for use in wards, corridors, kitchens, dining rooms, utility rooms, delivery rooms, nurseries and all other locations where the noise generated reaches a disturbing level.

SOUND CONTROL for SCHOOLS

In the modern school with its greatly broadened activities, noise is one of the most serious handicaps with which both student and teacher have to contend. Here again, Johns-Manville, through a careful study of the many problems involved, has developed a complete system of Sound Control. Wherever unwanted noise occurs—in the classroom, the auditorium, the cafeteria or in any one of a score of other locations—it can be effectively wiped out with J-M Sound Control Materials, applied in accordance with the proved methods developed through J-M's quarter century of acoustical experience.

JOHNS-MANVILLE SOUND CONTROL

Acoustical Engineering Service
Sound Control Problems

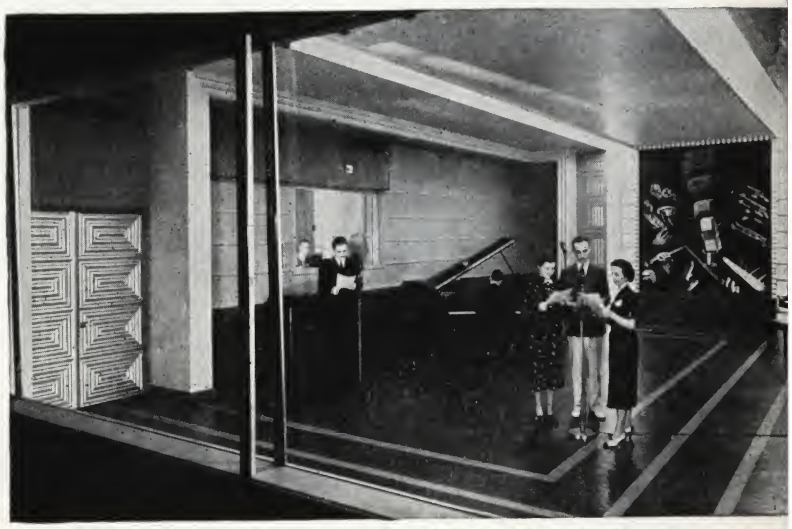
AUDITORIUM ACOUSTICS

More than any other form of Sound Control, auditorium acoustics require a highly specialized treatment. Many factors requiring consideration are usually present and each particular auditorium presents an individual problem. How can "dead spots" be avoided and uniform distribution of sound be assured? Shall the absorbing material be applied to the ceiling alone —or to ceiling, sidewalls and backwall? These and similar questions that confront the architect are readily answered by J-M Engineers, who have provided proper hearing conditions in many thousands of theatres, churches, music and concert halls and other types of auditoriums throughout the country. This broad experience is freely available to architects who are faced with the problem of meeting both acoustical and architectural requirements in their design.

A J-M acoustically treated ceiling assures correct hearing conditions without sacrificing architectural beauty in this University of Rochester auditorium.

BROADCASTING STUDIOS

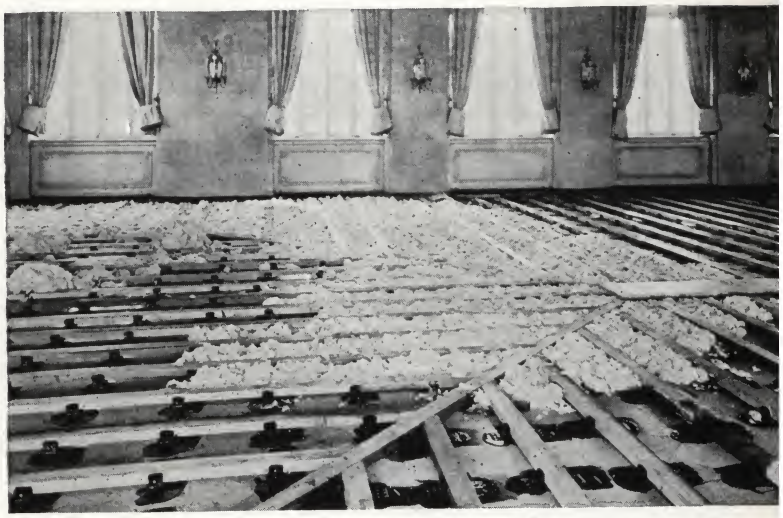
As pioneers in sound control, Johns-Manville has been in a unique position to meet the exacting acoustical requirements of the broadcasting industry. Such problems as the elimination of reverberation and distortion, the absorption of sound at all frequencies, and the proper designing of the studio to keep out extraneous noise, have yielded readily to the research of J-M Engineers. As a result, J-M Sound Control Materials and Methods today play a major part in creating and safeguarding high-fidelity broadcasting. An illustrated brochure "Studios by Johns-Manville" is available to architects on request. (See also page 11.)



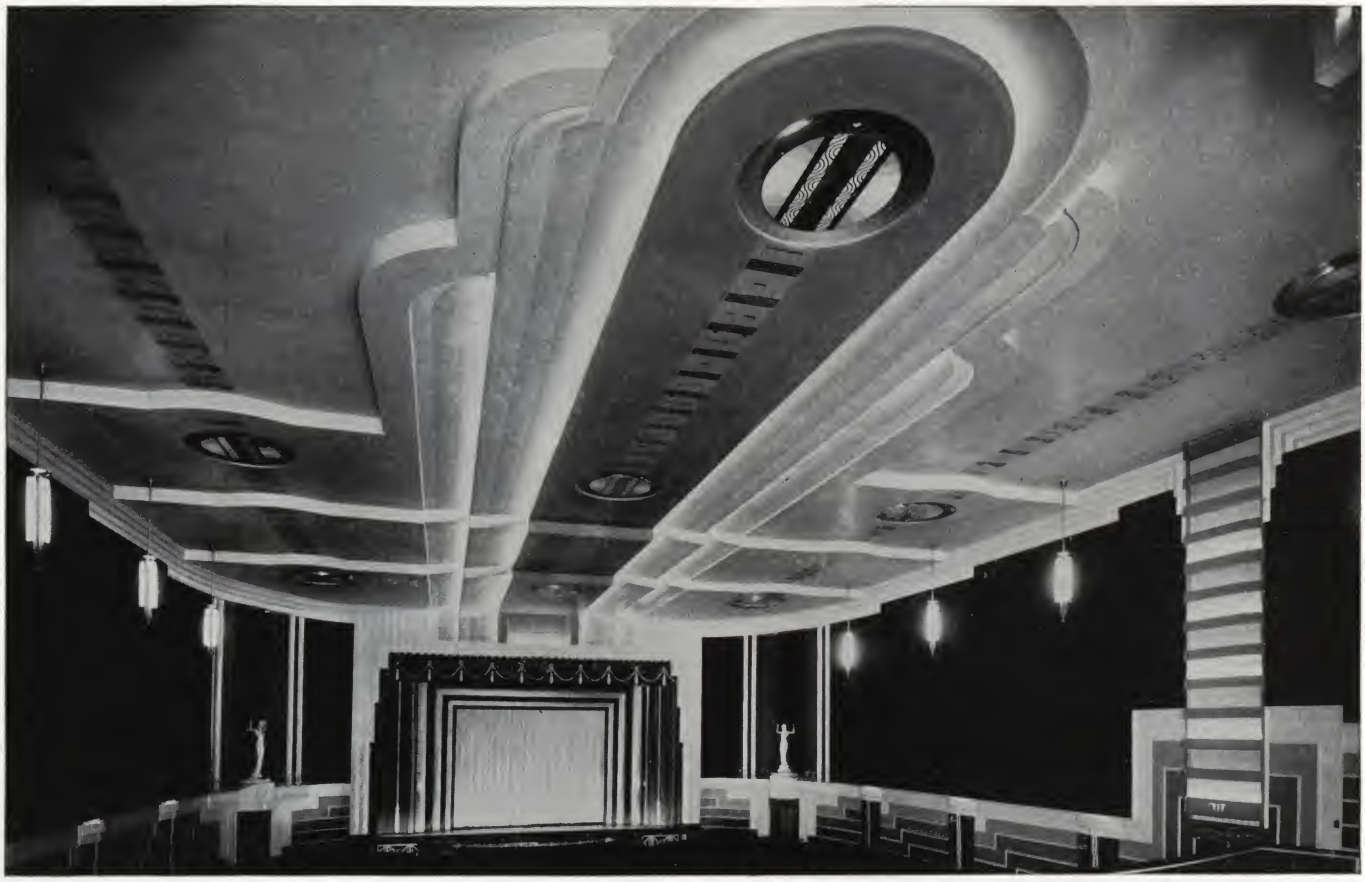
One of many broadcasting studios with Sound Control by Johns-Manville— Station WOWO—WGL, Fort Wayne, Ind. Note the effective modern design.

SOUND ISOLATION

The J-M system of Sound Isolation is an ingenious method of isolating sound and vibration at its source by preventing sounds from traveling from one space to another through partition, floor and ceiling structures. It is particularly adapted for the isolation of sounds generated in machine shops, ventilating equipment and similar noisy areas within the building and is extensively used in the construction of music practice rooms, band and orchestra rooms, broadcasting studios, motion picture studios, ballrooms, etc. (See also page 10.)



A J-M sound-isolated floor under construction. Cushioned floor chairs are a part of the "floating" construction which effectively isolates sound and vibration.



The variety and flexibility of J-M Acoustical Materials make possible the fulfillment of all architectural requirements, as is evidenced by the striking beauty of this interior. Eglinton Theatre, Toronto, Ontario. Kaplan & Sprachman, Architects.

There is a Johns-Manville Acoustical Material for every type of Sound Control Requirement

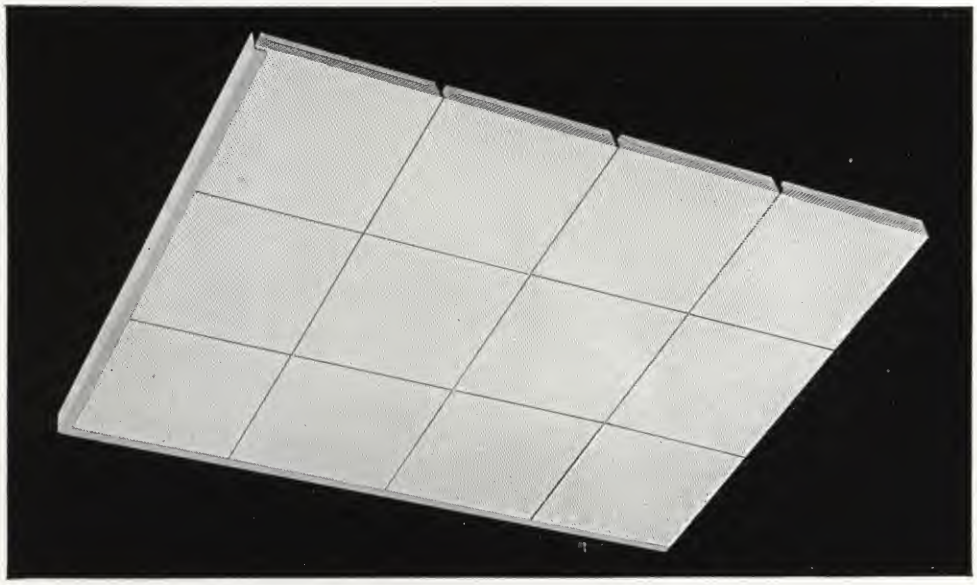
BECAUSE acoustical problems are so diverse in their nature, no one type of sound control material can provide the most effective corrective measures in all cases. For this reason, and to meet practical and decorative requirements as well, Johns-Manville offers the architect a wide choice of materials, as described on the following pages.

Each of these materials has been designed to provide a certain required degree of sound absorption; its performance in this respect has been carefully predetermined at the J-M Acoustical Laboratory. In addition, each has been put through the most rigid tests for applicability, paintability, moisture-resistance, strength and other important physical properties. No J-M Sound Control Material is approved for commercial use that has not successfully passed these exacting requirements.

And once approved, strict adherence to these specifications is insured by frequent control tests made with samples taken from production before shipment is made.

By thus providing materials to meet all conditions—materials whose performance is definitely known in advance — Johns-Manville is equipped to make a completely unbiased recommendation for the most effective and economical solution to every type of problem in sound control.

JOHNS-MANVILLE SOUND CONTROL



A typical Sanacoustic ceiling panel. Note the perfect alignment of the units.

SANACOUSTIC UNITS

Sanacoustic Units, because of their exceptionally high sound absorbing efficiency, low maintenance cost and permanence, are probably the most widely used of any acoustical material available today.

Composed entirely of metal, mineral wool and asbestos, such a ceiling cannot rot, disintegrate or burn. Each unit consists of a perforated sheet metal casing, finished with baked enamel and containing a special rock wool pad—the sound absorbing medium. The units lock into tee bars mechanically fastened to the surface to be treated—a method of installation which permits any part of the ceiling to be taken down and relocated without loss of materials.

To assure the maximum absorption of sound, the face of the rock wool pad is left exposed behind the perforated metal casing. The back and edges of the pad, however, are covered with asbestos paper to prevent the infiltration of air.

The baked enamel surface of Sanacoustic Units may be washed repeatedly without injury to the finish or painted without loss of sound absorbing efficiency, although painting is unnecessary unless a change of color is desired. The permanence of the surface and the ease of cleaning assure low maintenance costs.

Sanacoustic Units are available in white or cream enamel, in wood grain finish, and in polished or enameled aluminum. Standard sizes are 12" x 12", 16" x 16", and 24" x 24".

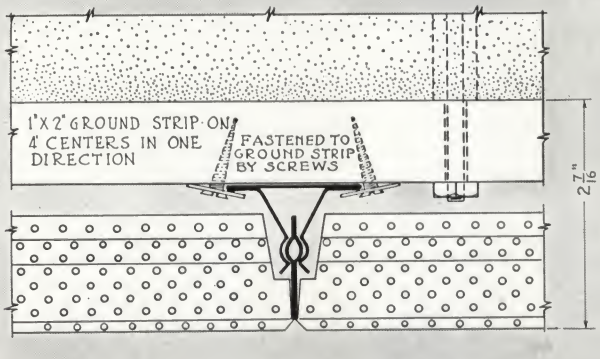
SANACOUSTIC VENTILATING CEILINGS

Besides quieting room noise, Sanacoustic Ventilating Ceilings also afford uniform distribution of air. Consisting of 12" x 24" Sanacoustic Units hung as a suspended ceiling, each unit is so installed that the furred space becomes a plenum chamber for the air conditioning system. The thousands of perforations in each unit serve as supply openings, through which air flows slowly and noiselessly into the room.

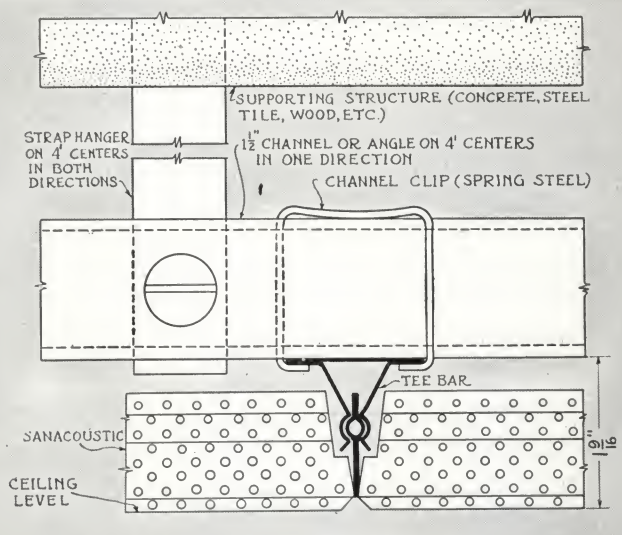
SOUND ABSORPTION COEFFICIENTS

Tests by the official laboratory of the Acoustical Materials Assn.

Material	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Noise Red. Coefficient
Sanacoustic Units	1-9/16"	.43	.65	.95	.93	.80	.85

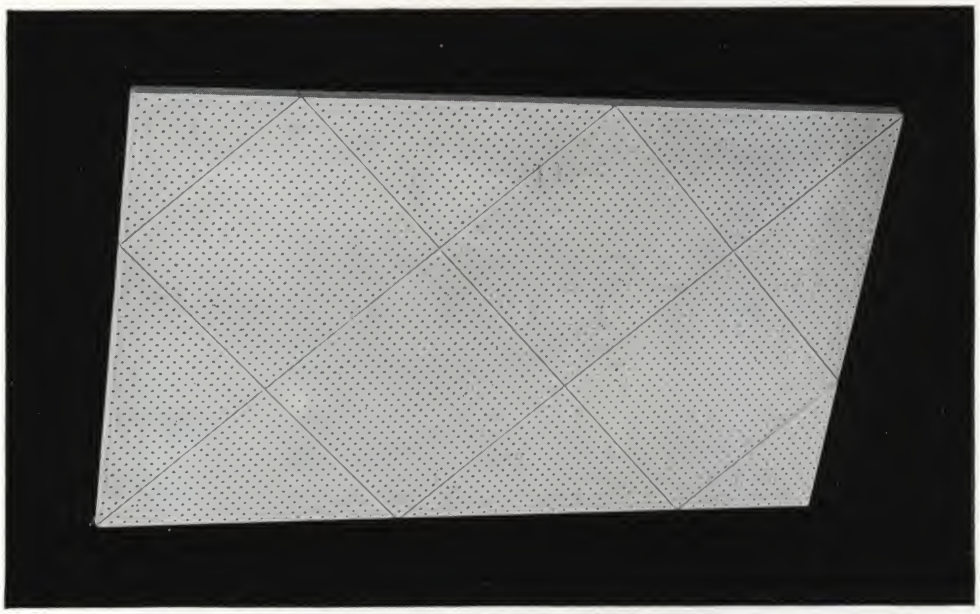


METHOD OF ATTACHING SANACOUSTIC TO EXISTING CEILING



METHOD OF SUSPENDING SANACOUSTIC FROM SLAB

JOHNS-MANVILLE SOUND CONTROL



This ceiling panel of Transite Acoustical Units illustrates one of several designs possible.

TRANSITE ACOUSTICAL UNITS

This material offers the ultimate in fire-resistance and permanence in an acoustical ceiling. Its surface is a perforated sheet of Johns-Manville Transite, an asbestos-cement product, which because it is fireproof as well as highly resistant to moisture and corrosive fumes, has for many years served as a highly satisfactory building material for industrial building exteriors. In Transite Acoustical Units, this rugged material is backed by a rock wool sound-absorbing element, forming an all-mineral ceiling which is ideal for such locations as chemical laboratories, gymnasiums, swimming pools, etc., as well as offices and auditoriums.

Because of their sound-absorbing characteristics, Transite Acoustical Units also insure the acoustical brilliancy so desirable in music rooms, band and orchestra halls and theatres.

Brass grommets, inserted in the corners of each unit, fasten the sound-absorbing element and the facing together, and also provide openings for nailing through the unit to the furring strips.

The units are furnished in the natural buff finish of Transite and in a cream white finish, in 12" x 12" squares of 1⅛" thickness.

TRANSITE ACOUSTICAL PANELS

Transite Acoustical Panels are similar in appearance to Transite Acoustical Units. The panels, however, are available in larger sizes and with a choice of sound-absorbing elements. They are furnished in the natural buff finish of Transite and in a cream white finish in sizes of 12" x 12", 12" x 24", 24" x 24" and 24" x 48".

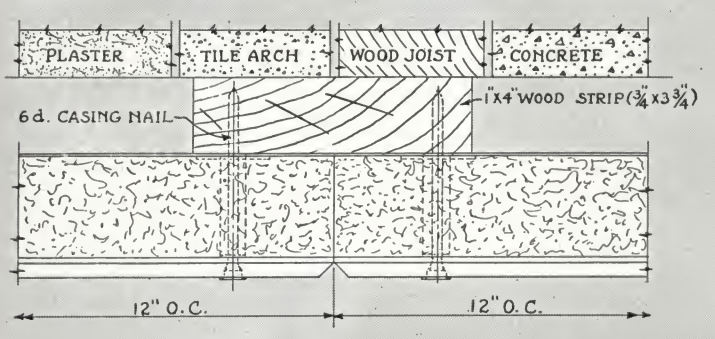
In using Transite Acoustical Panels, the sound absorbing element must first be installed between wood furring strips, after which the perforated Transite panels are secured to the face of the furring strips.

The sound absorbing coefficients of Transite Acoustical Panels are governed by the type and thickness of the sound absorbing element used in the construction.

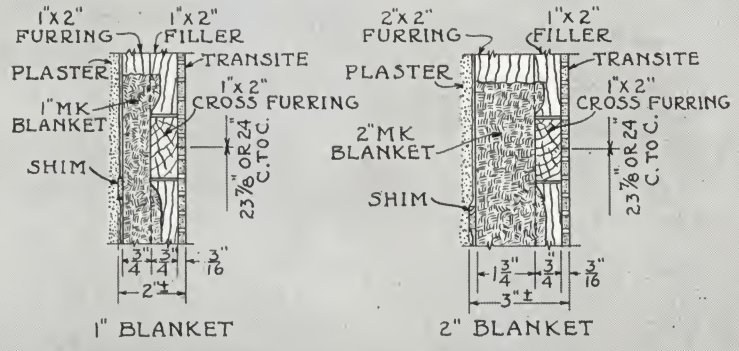
SOUND ABSORPTION COEFFICIENTS

Tests by the official laboratory of the Acoustical Materials Assn.

Material	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Noise Red. Coefficient
Transite Acoustical Units	1⅛"	.47	.65	.69	.77	.70	.70



SECTION SHOWING INSTALLATION OF TRANSITE UNITS



SECTION DETAILS OF TRANSITE ACOUSTICAL PANELS WITH SOUND ISOLATION BLANKET

JOHNS-MANVILLE SOUND CONTROL

A beautiful wall panel of Permacoustic—an ideal acoustical material for both walls and ceilings.

PERMACOUSTIC

This new J-M Acoustical Material is a ceramic product formed by baking rock wool and clay under extremely high temperatures. The resultant material has a warm, pleasing, light cream color with an interesting, rather fine surface texture providing a character and appearance not found in most acoustical products. Light in weight, it is easily handled and may be cut with an ordinary carpenter's handsaw.

Although a utilitarian material, Permacoustic is especially adaptable to monumental type buildings where high sound absorption is required. Its stone-like appearance harmonizes splendidly with the masonry surfaces that are so frequently used in churches, school lobbies, theatres, libraries, courtrooms and similar interiors as well as in offices.

Permacoustic may be painted if desired and is easily cleaned with soap and water without affecting its sound-absorbing qualities or in any way altering its attractive texture or its basic composition. It is furnished in sizes of 12" x 12", 9" x 9" and 9" x 18" with a ⅛" bevel on all sides and in 1" thickness.

FIBRETEX

Fibretex is a fire and moisture-resistant acoustical material made of wood fibre. It is particularly applicable in offices, schools, churches and gymnasiums where a sound-absorbing material giving a tile pattern or plank effect in harmonizing colors is desired. Fibretex is available in standard colors of white, light buff, medium buff, dark buff, light gray and apple green. Fibretex is supplied in sizes of 6" x 12", 12" x 12", 6" x 24", 12" x 24" and 24" x 24", in thicknesses of ⅝", ¾", ⅞", 1" and 1⅛" and is also available in planks of 6", 12", and 24" widths, in lengths up to 96".

NASHKOTE

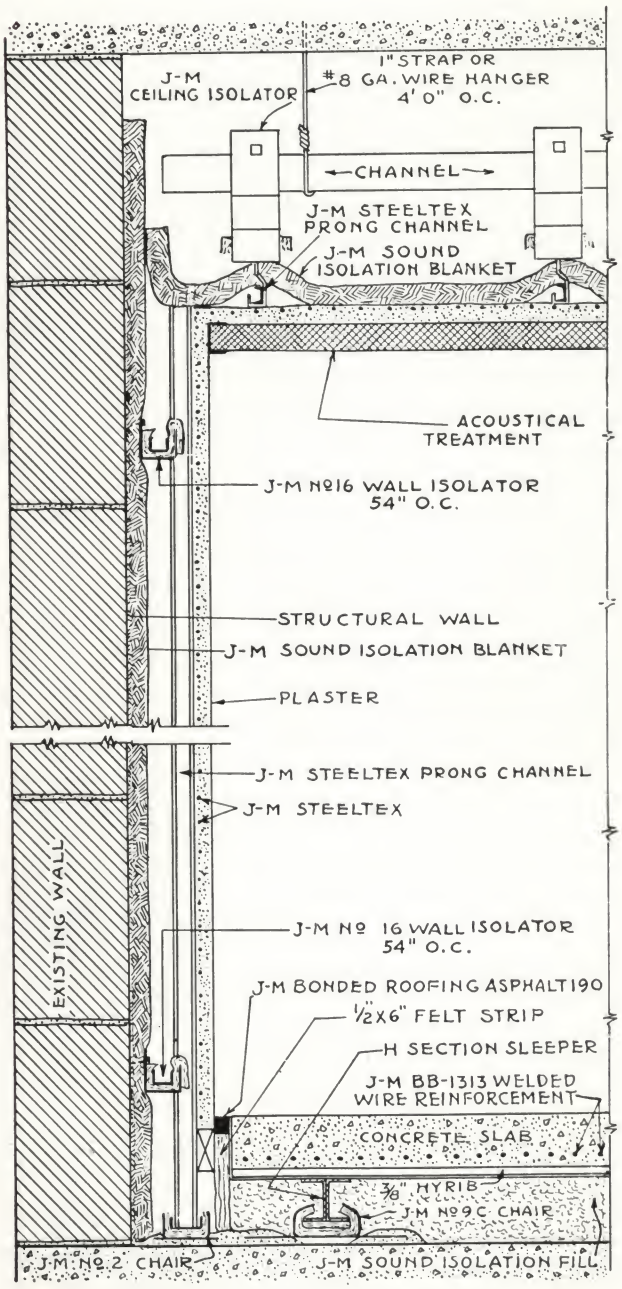
Nashkote is recommended for installations where an unbroken finish rather than tile lines are desired. It consists of Akoustikos Felt covered with a membrane. Three types are available: Nashkote A—muslin membrane painted with flat interior paint; Nashkote S—muslin membrane with sand finish; and Nashkote B—perforated Sanitas membrane.

SOUND ABSORPTION COEFFICIENTS

Tests by the official laboratory of the Acoustical Materials Assn.

Material	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Noise Red. Coefficient
Permacoustic	1"	.21	.47	.74	.72	.75	.65
Fibretex	⅞"	.24	.40	.82	.90	.72	.70

A Fibretex ceiling panel in Herringbone design.



J-M SYSTEM OF SOUND ISOLATION

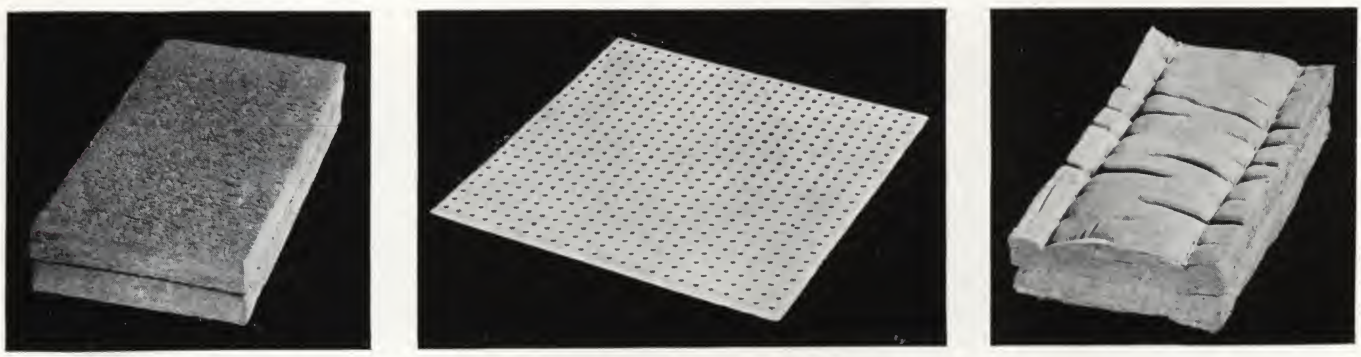
The principle of the J-M System of Sound Isolation is based on the erection of a light weight interior which is within, yet completely separated from, the rest of the structure. This is accomplished by means of shock-absorbing isolators. No solid, through-connections are used.

Sound Isolation treatments are advantageously installed in clubs or lodge buildings, in hotels, hospitals, libraries and in individual buildings where light manufacturing is conducted adjacent to office spaces. Where mass drills and games are in continuous session, the isolation of school gymnasiums makes possible the use of nearby classrooms for lectures, recitation and study. Music instruction, band or orchestra practice rooms particularly require a sound isolation treatment.

Radio broadcasting studios must be completely isolated in order to permit accurate reproduction of music and speech. It is imperative that extraneous sounds originating in corridors, control rooms or other studios be kept from the microphone. Guarding against these noises necessitates studio isolation which actually constitutes a "room within a room."

Sound Isolation also permits many economies in design and construction such as locating ventilating fans and motor generator sets where they are needed. These as well as other noise-producing service activities may be conveniently placed and sound isolated instead of grouped in out-of-the-way places. Theatres may be built next to bowling alleys, and billiard rooms next to ballrooms if measures are taken to prevent the transmission of sound between them.

Left: Johns-Manville System of Sound Isolation as applied to walls, ceilings and floors in fireproof construction.



J-M SOUND CONTROL MATERIALS FOR BROADCASTING STUDIOS

The Transite Acoustical Panel, center, is used over the rigid Studio Element, left, or Sound Isolation Blanket, right, to achieve the correct acoustical balance.

JOHNS-MANVILLE SOUND CONTROL

J-M AIRACOUSTIC SHEETS FOR DUCT LINING

J-M Airacoustic Sheets, primarily designed for duct lining in air-conditioning systems, are a sound-absorbing material in rigid block form composed of rock wool and a suitable binder. Because they will not smolder or support combustion, their use is recommended for all installations where combustible or merely "fire-resisting" materials would contribute to the fire hazard. The sheets are also easy to handle, cut and apply.

Light in weight, Airacoustic Sheets are easy to handle and install in the duct.

The extent of the fire hazard in air-conditioning systems is evidenced by the report of the National Board of Fire Underwriters (Bulletin No. 10, issued Jan. 22, 1935, entitled "The Hazard of Combustible Linings in Air Ducts"). The bulletin reports on two serious fires which were the direct result of the combustible nature of the material used as a sound-absorbing lining of the ducts in air conditioning systems.

Possessing a high degree of sound absorption, Airacoustic Sheets are also extremely resistant to moisture, an especially important advantage in a duct lining material. The sheets, 24" x 36" in size, are furnished in standard thicknesses of ½", 1" and 1½".

SOUND ABSORPTION COEFFICIENTS

Tests by the official laboratory of the Acoustical Materials Assn.

Material	Thickness	128 Cycles	256 Cycles	512 Cycles	1024 Cycles	2048 Cycles	Noise Red. Coefficient
Airacoustic Sheets	½"	.24	.46	.50	.57	.63	.55
	1"	.46	.60	.63	.66	.73	.65

BROADCASTING STUDIO ACOUSTICS

There is no sound control problem as critical as that encountered in broadcasting studios. Not only must proper balance be maintained between the fundamentals, harmonics and over-tones of speech and music, as generated within the studios, but the isolation of extraneous sound from the studios and control rooms must also be carefully considered. (See detail of J-M System of Sound Isolation on preceding page).

Johns-Manville specializes in the design and construction of broadcasting studios, maintaining a consulting service for the assistance of architects engaged on such projects. This service embraces all phases of the problem, including a study of the proposed site with relation to potential noise problems, planning the studio group, relationship of studios and control rooms, studio proportions and size, acoustical correction by the use of materials with the proper characteristics and distribution, together with the all-important consideration of adequate sound isolation.

"STUDIOS BY JOHNS-MANVILLE"

The following list includes some of the recent studio installations of Johns-Manville Sound Control:

KDKA,	Pittsburgh, Pa.	**WCOU,**	Lewiston, Me.
KRLD,	Dallas, Texas	**WEBC,**	Duluth, Minn.
WABC,	New York, N. Y.	**WGN,**	Chicago, Ill.
WBBM,	Chicago, Ill.	**WJSV,**	Washington, D. C.
WDBJ,	Roanoke, Va.	**WJZ,**	New York, N. Y.
WEAF,	New York, N. Y.	**WKY,**	Oklahoma City, Okla.
WENR,	Chicago, Ill.	**WLS,**	Chicago, Ill.
KNX,	Los Angeles, Cal.	**WMAQ,**	Chicago, Ill.
KFI,	Los Angeles, Cal.	**WOR,**	New York, N. Y.
WRNL,	Richmond, Va.	**WOW,**	Omaha, Nebr.
WGY,	Schenectady, N. Y.	**WWJ,**	Detroit, Mich.
KYW,	Philadelphia, Pa.	**WRC,**	Washington, D. C.
KGKO,	Ft. Worth, Texas	**WICA,**	Ashtabula, O.
CKTB,	St. Catherines, Ont.	**WOWO,**	Ft. Wayne, Ind.
WDAN,	Danville, Ill.	**WHAS,**	Louisville, Ky.
WOAL,	San Antonio, Texas	**KGNC,**	Amarillo, Texas

Johns-Manville

SOUND CONTROL

At each of the J-M Offices listed below, there is a Johns-Manville Acoustical Engineer whose services are available to architects at all times in an advisory capacity, without cost or obligation.

Albany, N. Y. . . . . 1039 Broadway
Atlanta, Ga. . . . . 101 Marietta Street Bldg.
Baltimore, Md. . . . . 1312 Standard Oil Bldg.
Boston, Mass. . . . . 49 Federal Street
Buffalo, N. Y. . . . . 220 Delaware Avenue
Chicago, Ill. . . . . 222 North Bank Drive
Cincinnati, Ohio . . Central Parkway at Walnut St.
Cleveland, Ohio . . 45 Prospect Avenue, N.W.
Dallas, Texas. . . . . 2107 Griffin Street
Denver, Col. . . . . 17th & Glenarm Place
Detroit, Mich. . . . . West Grand Blvd. at Second
Hartford, Conn. . . . 29 Bartholomew Avenue
Houston, Texas . . . . 2212 Polk Avenue
Indianapolis, Ind. . . 1503 Merchants Bank Bldg.
Kansas City, Mo. . . 2030 Walnut Street
Los Angeles, Cal. . . 816 West 5th Street
Milwaukee, Wis. . . . . 757 North Broadway
Minneapolis, Minn. . . . 732 Baker Building
New Orleans, La. . . . . 200 Carondelet Street
New York, N. Y. . . . . 22 East 40th Street
Philadelphia, Penn. . . . . 1617 Penna. Blvd.
Pittsburgh, Penn. . . . . Liberty Ave. at 7th St.
Portland, Ore. . . . . 319 S.W. Washington St.
Rochester, N. Y. . . . . 999 East Main Street
St. Louis, Mo. . . . . 1000 Market Street
St. Paul, Minn. . . . . 710 Pioneer Building
San Francisco, Cal. . . . 116 New Montgomery St.
Seattle, Wash. . . . . 743 Henry Building
Syracuse, N. Y. . . . . 821 Burnet Avenue
Washington, D. C. . . . . 15th & H Streets, N.W.
Montreal, Canada . . . . . 1062 Sun Life Bldg.
Toronto, Canada . . . . . Laird Drive (Leaside)

Johns-Manville

Executive Offices: 22 East 40th Street, New York, N. Y.

JOHNS-MANVILLE
JM
PRODUCTS

ESTABLISHED 1899

DAVID E. KENNEDY, INC.

Kennedy Acoustical Tile

FACTORY AND EXECUTIVE OFFICES

58 Second Avenue, BROOKLYN, N. Y.

SALES OFFICES

CHICAGO, ILL, 30 No. Michigan Avenue
NEW HAVEN, CONN., P.O. Box 927

ATLANTA, GA., Bona Allen Bldg., 333 Luckie Street
LOS ANGELES, CALIF., 808 So. Vermont Avenue

RESPONSIBLE ACOUSTICAL CONTRACTORS IN PRINCIPAL CITIES

For Kennedy Resilient Tile Floors, see File Index

KENCOUSTIC

Tested (National Bureau of Standards, Washington, D. C.)
Showing a Sound Absorption Coefficient of .66 at a Frequency of 512 Cycles.

Close-up of Kencoustic Showing Interesting Texture Which Creates a Quiet, Peaceful Interior.

Cork is by its very nature the ideal acoustical material. Instead of being fibrous, cork is cellular —and air is trapped within each of its millions of tiny cells. Over 50% of the volume of cork is air. For this reason cork magically combines resilience with toughness, furnishes a fascinatingly irregular surface and also provides thermal insulating properties. It is supreme as a sound absorber. Baked, processed and cut (but otherwise untouched), cork is the sole ingredient of Kencoustic.

Thermal Insulation

Kencoustic tiles, made entirely of cork, have a high insulating value — keep rooms cooler in summer, warmer in winter, reduce fuel costs, aid in the effective operation of air conditioning systems.

Cleanliness

Kencoustic has no fibres to hang down to attract or hold dirt. Neither has it deep holes or indentations to furnish nesting places for insects or attract vermin, germs or odors. It resists passage of air so dirt cannot filter out upon the exposed surface.

A Telephone Room in Which the Elimination of a Confusing Babble of Voices Greatly Increased the Operator's Efficiency.

Easy Maintenance

Kencoustic is kept perfect by ordinary soap and water washing. The average installation will not require repainting more than once every 6 to 10 years and then can be repainted without noticeable loss of efficiency.

Durable

Because cork resists moisture and temperature changes, Kencoustic does not disintegrate or deteriorate even in swimming pools or high humidity rooms. Kencoustic does not shrink, swell, warp or mold.

Fire Resistant

Kencoustic has successfully undergone exhaustive fire tests and will not increase insurance rates in fireproof buildings.

Appearance

Aside from its unmatched practical advantages, Kencoustic appeals to every imaginative architect in one other way—its acceptance in *beautiful* rooms.

Simply made of pure cork it has all the surface attractiveness of this interesting material. Instead of a monotonous and overbearing pattern of dots or squares, its appearance is subtle and interesting. It is unostentatious yet characterful.

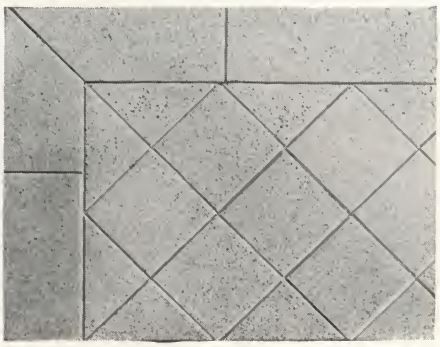
It may also be painted at the factory in any special color needed to fit a particular decorative scheme. Special sizes also can be cut at the factory. We recommend investigating practicability of unit desired before planning.

Specifications for Kencoustic

(1) The ceilings in (enumerate spaces) shall be of Kencoustic, manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., and installed by its approved acoustical contractor. Thickness should be 1½ in. Size of units shall be [9 x 9 in.] [9 x 18 in.] [18 x 18 in.] [12 x 18 in.]—mention which size desired. Each unit shall have beveled edges. Kencoustic shall be installed in accordance with manufacturer's instructions.

(2) The sound coefficient at 512 cycles, per second shall be at least 66%. Kencoustic shall be factory painted. Color to be selected by architect. (Standard colors are White, Buff and Ivory. Special colors to order.) Kencoustic shall be fire retarding or slow burning and the light reflection shall be at least 75% for Kencoustic painted white.

Design KA



Design KB

Design KC

R. GUASTAVINO COMPANY

40 Court Street
BOSTON, MASS.

500 Fifth Avenue
NEW YORK, N. Y.

REPRESENTATIVES
ATLANTA, GA.
CINCINNATI, OHIO
CLEVELAND, OHIO
DETROIT, MICH.
NEW ORLEANS, LA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SAN FRANCISCO, CALIF.

CANADA: R. GUASTAVINO CO. OF CANADA, LTD.
1026 Des Carrieres Street, Montreal

PRODUCTS

GUASTAVINO TIMBREL ARCH CONSTRUCTION.
SPECIAL CERAMIC TILE, glazed and unglazed.
RUMFORD CERAMIC ACOUSTIC TILE.
AKOUSTOLITH sound-absorbing stone, in tile and ashlar sizes and in blocks.
AKOUSTOLITH sound-absorbing plaster.
CASTACOUSTIC sound-absorbing casting plaster.
PLASTACOUSTIC sound-absorbing plaster.

SERVICES

This Company maintains an experienced engineering staff to work and consult with architects on all problems concerning the use of its products, both structural and acoustical.

EXHIBITS

The R. GUASTAVINO COMPANY maintains a complete exhibit of its products in its New York Office and also in the Architects' Sample Corporation at 101 Park Avenue, New York, N. Y.

GUASTAVINO TIMBREL ARCH CONSTRUCTION

This type of fireproof construction, first introduced into the United States in 1885 by the late R. Guastavino, Sr., has been used in domes of more than 130-ft. span. It is light and shell-like, a three course arch weighing only 40 lbs. per square foot.

The vaulting can be designed to carry any load desired for residence, office, ecclesiastical or heavier bridge work, tests for fire and load having been passed by the New York Building Department and the Massachusetts Institute of Technology.

Method of Construction

Tiles 6x12 in. to 6x24 in., 1 in. thick are laid flat in cement mortar and bonded together to make a solid and homogeneous mass. For ordinary three course work, the crown of the arch is about 4 in. thick.

While domes or vaults may show exterior as well as interior lines exposed as part of the design, they are also built with an exterior leveling to obtain flat or sloping surfaces. In the case of floor vaults, this is done by "bridges and flatwork" formed by dwarf walls about 24 in. on centers which carry the tile leveling. The air cells so formed are often used for concealing heating and ventilating ducts.

Architectural Adaptability

Guastavino Construction affords a wide range of possibilities in the matter of design as it can be used in practically any architectural style. (See typical details on following pages.) The rough tile soffit may be exposed, or a finish tile used. If a finish surface is wanted we manufacture and install glazed and unglazed ceramic tile, and AKOUSTOLITH Sound-absorbing Tile.

Engineering Services

It will be readily seen by examining the detail drawings that we must necessarily work in close co-operation with the architect. For vault, dome or arch work of a constructive nature our engineers will work with the architect to obtain the effect he desires and then design the construction to fit the requirements.

Specifications

Specifications will be written by us for this work and its relation to other work in the building.

For typical specifications with AKOUSTOLITH Tile soffit course, see page 3, AKOUSTOLITH Tile specifications Ceiling Work—(a).

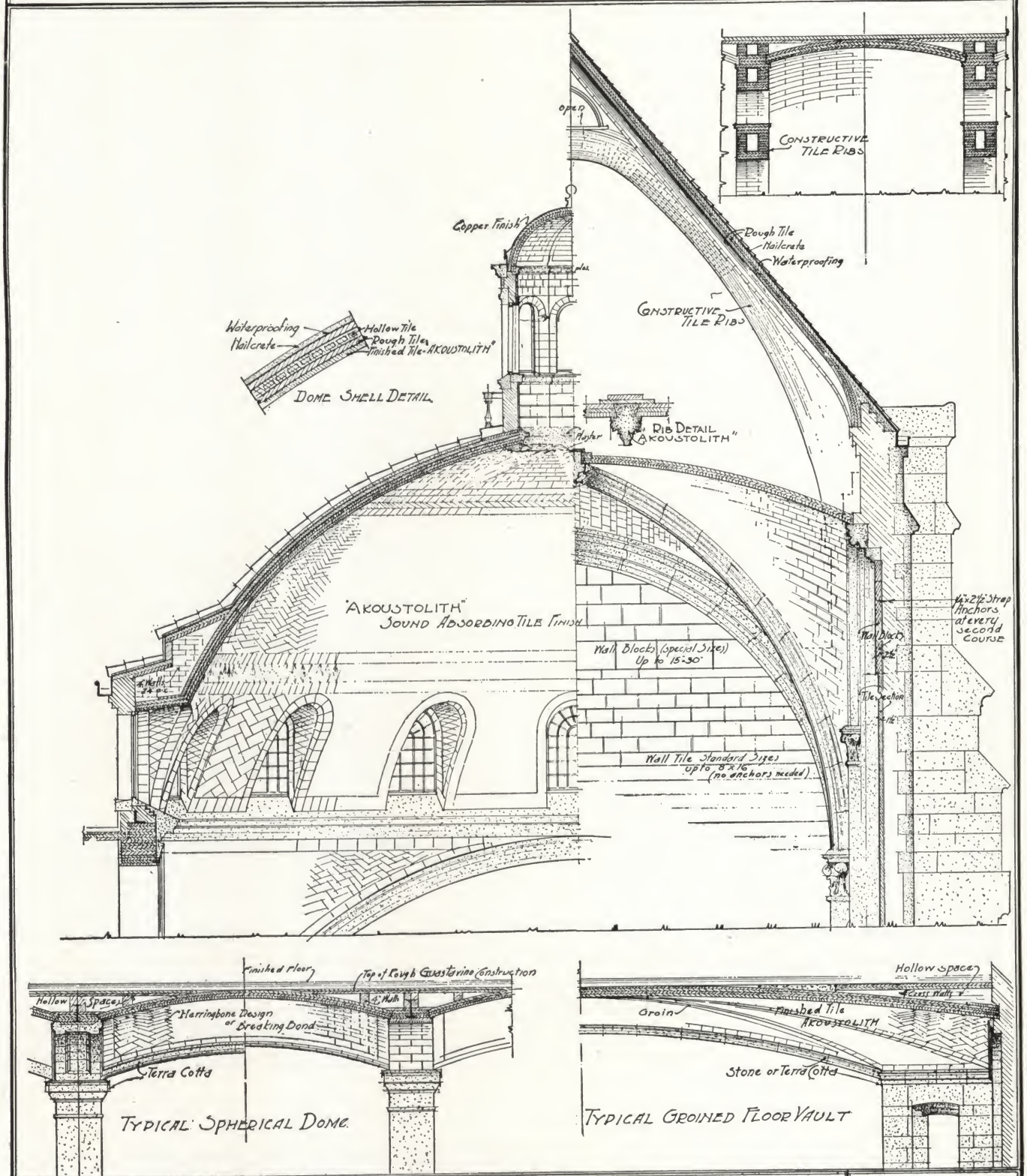
Installation

Guastavino Timbrel Arch Construction is always installed by our own mechanics, specially trained in this work.

A FEW OUTSTANDING INSTALLATIONS

Cathedral of St. John the Divine, New York, N. Y., Cram & Ferguson, Architects.
Grace Cathedral, San Francisco, Cal., Lewis P. Hobart, Architect; Cram & Ferguson, Consulting Architects.
St. Albans Cathedral, Washington, D. C., Frohman, Robb & Little, Architects.
Nebraska State Capitol, Lincoln, Neb., Bertram Grosvenor Goodhue and Bertram Grosvenor Goodhue Assoc., Architects.
Riverside Church, New York, N. Y., Pelton, Allen & Collens, Architects.
Chicago University Chapel, Chicago, Ill., Bertram Grosvenor Goodhue Assoc., Architects.
National Shrine of the Immaculate Conception, Washington, D. C., Maginnis & Walsh, Architects.
Princeton University Chapel, Princeton, N. J., Cram & Ferguson, Architects.
Duke Chapel, Durham, N. C., Horace Trumbauer, Architect.
Benjamin Franklin Memorial and Franklin Institute Museum, Philadelphia, Pa., John T. Windrim, Architect.
East Liberty Presbyterian Church, Pittsburgh, Pa., Cram & Ferguson, Architects.
Heinz Memorial Chapel, University of Pittsburgh, Pittsburgh, Pa., Charles Z. Klauder, Architect.
Swimming Pool, Brooklyn College of the City of New York, Brooklyn, N. Y., Randolph Evans, Architect; Corbett, Harrison & MacMurray, Associated Architects.
Express Highway, W. 79th St. Grade Crossing Elimination, New York, N. Y., New York Central R. R., Engineers; Madigan-Hyland, Consulting Engineers.
Cathedral of Learning, Pittsburgh, Pa., Charles Z. Klauder, Architect.
Cloister Museum for the Metropolitan Art Museum, New York, N. Y., Allen & Collens, Architects.

GUASTAVINO VAULTING DETAILS



-SCALE-	R. Guastavino Company Factory -New York- -Woburn-Mass- -Boston-	-DETAIL SHEET-

AKOUSTOLITH

Sound-absorbing Artificial Stone in Tile or Ashlar Form

Description

AKOUSTOLITH is an artificial stone with a very high acoustical value. Tests by the National Bureau of Standards give coefficients of absorption for AKOUSTOLITH at C_4 of up to 95%, and noise coefficients of up to 90%. The sound-absorbing efficiency varies according to thickness and grade.

AKOUSTOLITH is genuine masonry, non-combustible and non-smoke producing. It will not warp and water has no effect on its structure. It can be easily cleaned by vacuum or by washing.

Uses*

Owing to its light weight and facility of manufacture AKOUSTOLITH is easily adapted to plain or elaborate architectural forms. It is used in tile form on walls, ceilings, arches, vaults and other architectural forms of a constructive nature. In ashlar sizes it has been used considerably by architects on sidewalls in lieu of stone work and has been successful in meeting their requirements.

*AKOUSTOLITH is also used extensively for industrial purposes, such as quieting exhaust and intake stacks in airplane engine test houses. Information will be found in SWEET'S FILES, INDUSTRIAL, or may be obtained by writing to our New York or Boston offices. Please refer to this material as "Industrial AKOUSTOLITH."

Textures and Colors

It has a fine granular surface and is made in textures similar to that of natural stones or as desired. It is made in colors ranging from gray white through various shades of buff, brown or other colors of the natural stone.

Sizes and Weight

AKOUSTOLITH is manufactured in any size from the smaller tile dimensions, 3x6 in.; 4x8 in.; 5x10 in.; 6x12 in. and 8x16 in. usually about 1 in. thick and for this thickness weighs about 4 lbs. per sq. ft. This light weight permits AKOUSTOLITH to be used in places where heavier material would be impracticable—for instance, ceiling work.

For wall ashlar, AKOUSTOLITH can be made in sizes up to 30x60 in. from 1½ to 2½ in. thick depending on size. It can also be moulded or cast in the usual architectural shapes. The distance from the backing to the finish face of AKOUSTOLITH will vary from 1⅜ in. for the smaller tile sizes to 3 in. for the larger ashlar sizes.

Installation

AKOUSTOLITH Tile used on ceilings has primarily been installed in connection with GUASTAVINO Timbrel Arch Construction, using it as a soffit course and backing up with two or more layers of rough tile. It is also installed by applying it directly to the soffit of concrete floor slabs or to wire lath and portland cement plaster ceilings.

For sidewall installations it can be cemented directly to masonry surfaces without scratch coat, if the surface is reasonably true.

SPECIFICATIONS

Ceiling Work

(a) As Part of Guastavino Timbrel Arch Construction—
Where indicated on drawings, or as hereinafter specified, the ceilings shall be constructed of Timbrel Tile arches by R. GUASTAVINO COMPANY, New York and Boston, with the soffit of the arch faced with (give size of tile) AKOUSTOLITH sound-absorbing stone tile. Tile to be laid in pattern shown.

Arch construction in addition to the soffit course of AKOUSTOLITH Tile shall consist of not less than two layers of good, hard burned, rough, semi-porous terra cotta tile, ranging from 1x6x12 ins. to 24 ins. in length. Tile shall be laid in 1 to 2½ mix portland cement mortar and reinforced with steel rods or bars between the courses or between the ends of the tile of the same course as may be necessary.

Centering—The contractor for the above vaulting shall provide and erect all centers required for the installation of his work. Centering shall remain in place until the mortar is set and hard, after which he shall remove all his centering from the building.

Vault Supports—The general contractor shall leave out recesses, or build masonry corbels or brackets in walls as well as any steel necessary for the support of the tile vaulting as shown on the working drawings of the architect and tile vault contractor.

(b) For Installing "Akoustolith" Tile Against Soffit of Concrete Floor Slabs—
Where indicated on the drawings, or as hereinafter specified, the ceiling or soffit of concrete floor slabs and beams shall be faced with AKOUSTOLITH sound-absorbing stone tile as manufactured by R. GUASTAVINO COMPANY, New York and Boston. Tile shall be (give size), laid in approved portland cement mortar in patterns as shown, directly against the cement slab and beams which have been properly roughened and cleaned by others. Joints ¼ in., colored as directed with approved mortar colors.

(c) For Installing "Akoustolith" Tile on Metal Lath Ceilings—

Note for Metal Lath and Furring Specifications: Where AKOUSTOLITH is specified or indicated on ceilings, beams, etc., the metal lath foundation should be formed of 1 in. standard channels set 12 in. o.c., covered with 3.4 lb. metal lath.

Note for Plastering Specifications: Wherever AKOUSTOLITH Tile is required for finished ceilings the metal lath shall be given two coats of portland cement mortar, the last to be scratched.

Wall Work

Where indicated in drawings or hereinafter specified the sidewalls shall be finished with AKOUSTOLITH sound-absorbing stone manufactured by R. GUASTAVINO COMPANY, New York and Boston. This shall be in ashlar (give sizes) of color and texture as selected by the architect, and laid up in pattern as shown on the drawing with a ¼-in. joint. AKOUSTOLITH ashlar shall be cemented directly against the masonry wall with portland cement mortar and anchored if necessary.

TYPICAL INSTALLATIONS OF AKOUSTOLITH

Temple Emanu-El, New York, N. Y., Robert D. Kohn, Charles Butler and Clarence S. Stein, Architects; Mayers, Murray & Phillip, Associate Architects.

Department of Commerce Building, Washington, D. C., York & Sawyer, Architects.

U. S. Post Office, Custom House and Courthouse, Duluth, Minn., Supervising Architect, Treasury Department.

Oklahoma City Post Office, Oklahoma City, Okla., Supervising Architect, Treasury Department.

Girard College Chapel, Philadelphia, Pa., Thomas Martin & Kirkpatrick, Architects.

Church of St. Andrew and St. Paul, Montreal, Canada, H. L. Fetherstonhaugh, Architect.

Federal Reserve Bank, Boston, Mass., R. Clipston Sturgis, Architect.

Federal Reserve Bank, New York, N. Y., York & Sawyer, Architects.

Federal Reserve Bank, Richmond, Va., Sill, Buckler & Fenhagen, Architects.

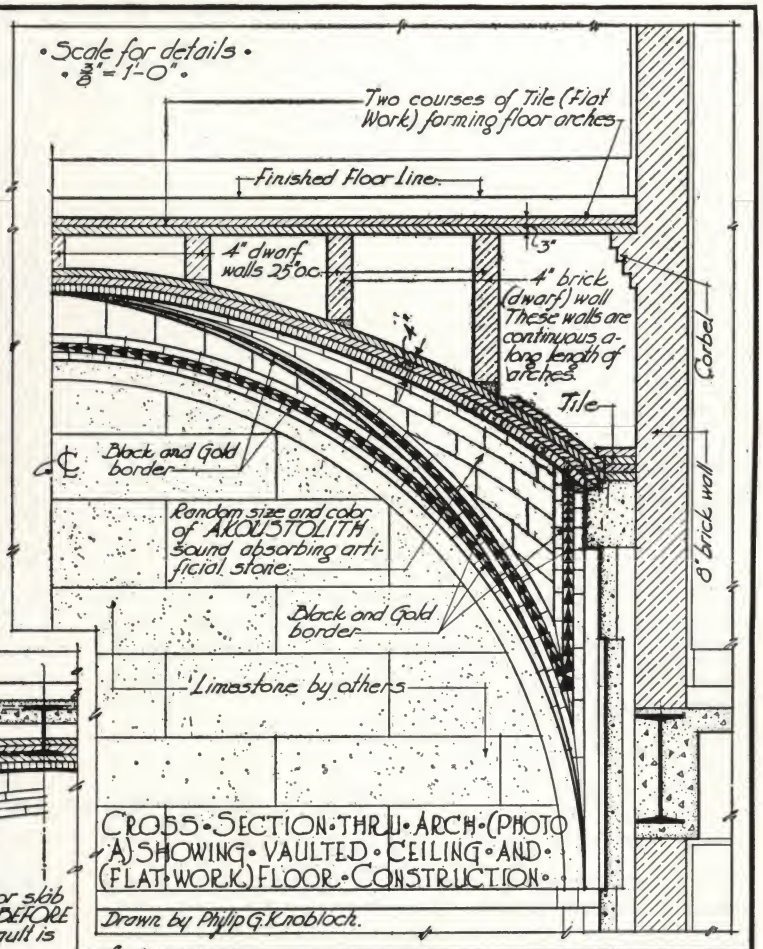
Federal Reserve Bank, Louisville, Ky., D. X. Murphy & Bro., Architects.

Federal Reserve Bank, Baltimore, Md., Parker, Thomas & Rice, Architects.

Federal Reserve Bank, Philadelphia, Pa., Bunting & Shrigley, Architects.

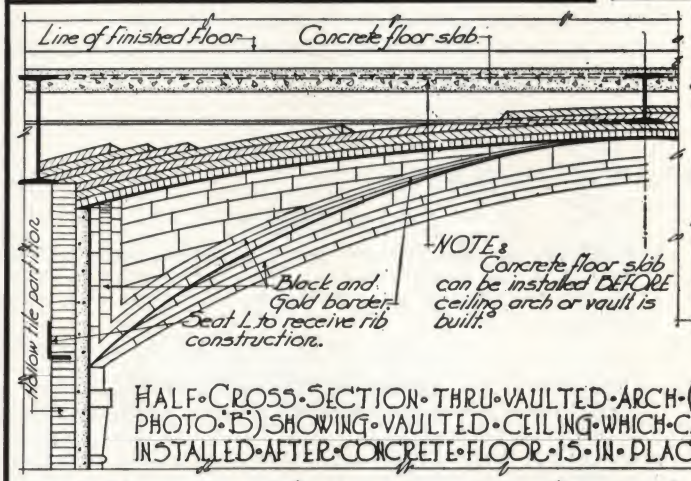
The Archives Building, Washington, D. C., John Russell Pope, Architect.

VESTIBULE ENTRANCE TO SALMON TOWER
YORK & SAWYER ARCH'TS. WEST 42ND STREET N.Y.C.

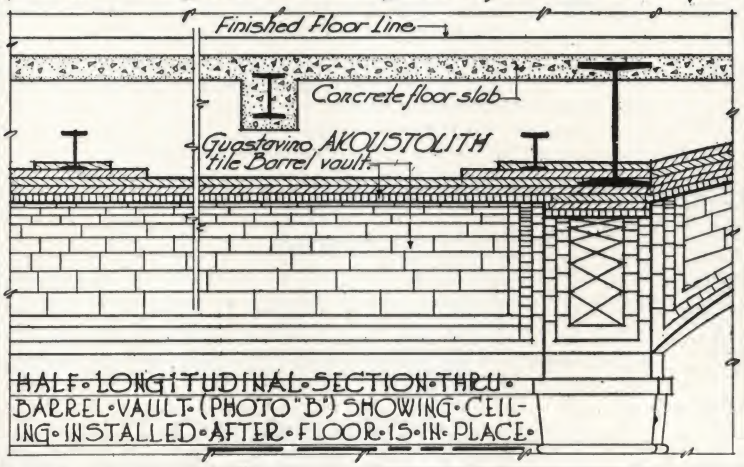


CROSS • SECTION • THRU • ARCH • (PHOTO "A") SHOWING • VAULTED • CEILING • AND • (FLAT • WORK) FLOOR • CONSTRUCTION •

Drawn by Philip G. Knobloch.



HALF • CROSS • SECTION • THRU • VAULTED • ARCH • (SEE PHOTO • "B") SHOWING • VAULTED • CEILING • WHICH • CAN • BE INSTALLED • AFTER • CONCRETE • FLOOR • IS • IN • PLACE •



HALF • LONGITUDINAL • SECTION • THRU • BARREL • VAULT • (PHOTO "B") SHOWING • CEILING • INSTALLED • AFTER • FLOOR • IS • IN • PLACE •

CORRIDOR ENTRANCE TO SALMON TOWER
YORK & SAWYER ARCH'TS. WEST 42ND STREET N.Y.C.

R • Guastavino Company

GUASTAVINO ACOUSTICAL PLASTERS

AKOUSTOLITH SOUND-ABSORBING PLASTER

General Description

AKOUSTOLITH Sound-absorbing Plaster is a light weight masonry material, troweled on as a finish coat over the ordinary base coats. As the binder of AKOUSTOLITH is portland cement, it is especially desirable for ceilings or walls exposed to dampness, as in swimming pools. Only regular plasterer's tools are required for its application. AKOUSTOLITH is now, and always has been, a fireproof material. The surface is hard and it may easily be cleaned by washing. AKOUSTOLITH Plaster *requires no floating, stippling or other mechanical processes to secure its efficiency.* More than fifteen years successful use in almost every type of building has proved its architectural correctness and acoustical efficiency.

Appearance

The texture of AKOUSTOLITH resembles a sand finish plaster. Its natural color is very light gray, almost white. It may be colored to almost any shade by the use of mortar colors. AKOUSTOLITH may be painted by using special thin acoustical paint.

Covering Capacity

AKOUSTOLITH Plaster ½ in. thick will cover from 100-110 yards per ton. At ¼ in. thickness it will cover 165-175 yards per ton.

Servicing

It is our practice to service each job in the United States with a representative at the starting of the installation. This is usually done at no extra charge.

Notes for Specification Writer

AKOUSTOLITH may be applied over lime, gypsum* or portland cement base coats. These must be applied in full accordance with the plaster manufacturer's specifications and the surface to receive AKOUSTOLITH must be thoroughly cross scored. If AKOUSTOLITH is to be used in any place where there is continual dampness, base coats must be portland cement applied in accordance with Portland Cement Association specifications.

Specification

Where acoustical treatment is shown on the plans and in the following spaces ..... it shall be AKOUSTOLITH Plaster as manufactured by R. GUASTAVINO COMPANY of New York and Boston, applied (specify thickness ½ or ¼ in.) in strict conformity with the manufacturer's written directions.

*The gypsum base coat or coats to be applied in accordance with manufacturer's directions, but in no case shall there be more than two parts sand to one part gypsum by weight.

PLASTACOUSTIC SOUND-ABSORBING PLASTER

General Description

PLASTACOUSTIC is a granular, light weight masonry sound-absorbing plaster, easily applied by trowel. It has a gypsum base. It resembles sand finish plaster and is furnished in either its natural grayish white color or in several other colors.

Application

PLASTACOUSTIC is applied to its desired thickness in ¼-in. coats. It goes on so easily that the average plasterer can apply 8 to 10 yards per hour (½ in. thick on a gypsum base coat). Only regular plasterer's tools are required.

Covering Capacity

PLASTACOUSTIC covers from 110 to 120 or more yards per ton (½ in. thick on a gypsum base). This large covering capacity combined with its low price brings the cost down to a very low figure.

Specification

Where acoustic treatment is used, it shall be PLASTACOUSTIC Sound-absorbing Plaster manufactured by R. GUASTAVINO COMPANY of New York and Boston. It shall be applied to a total thickness of ½ in. over a well scored gypsum base coat *in accordance with the manufacturer's written directions.

*The gypsum base coat or coats to be applied in accordance with manufacturer's directions, but in no case shall there be more than two parts sand to one part gypsum by weight.

CASTACOUSTIC SOUND-ABSORBING CASTING PLASTER

Purpose

CASTACOUSTIC is a sound-absorbing Plaster designed expressly for ornamental or coffered surfaces where acoustical treatment is desired, and where a surface having a period design or architectural character is required. (CASTACOUSTIC is not suitable for trowel application.) Almost any type of ornamental work which can be cast in plaster moulds can be formed in CASTACOUSTIC Plaster. Sharp undercut should be avoided.

Appearance

CASTACOUSTIC has a fine granular appearance and on high ceilings is scarcely distinguishable from ordinary plaster. In its natural color CASTACOUSTIC is a very light gray, almost white. It can be colored to any shade by the use of mortar colors added by the plasterer.

Structure

When mixed with the proper quantity of water, the structure of CASTACOUSTIC Plaster is open and continuously porous from the finish face completely through its entire depth. This porous structure provides the highest acoustical efficiency.

Covering Capacity

The covering capacity of CASTACOUSTIC Plaster is as follows: applied 1 in. thick one ton will cover approximately 45 yds.

Specification

The following rooms shall have all ornamental castings, as indicated on drawings, cast in CASTACOUSTIC Plaster as manufactured by R. GUASTAVINO COMPANY of New York and Boston. CASTACOUSTIC Plaster shall be mixed in strict accordance with the manufacturer's directions. The plasterer shall submit a sample casting for the approval of the architect. All cast work shall be set accurately and straight. Reinforcing and backing shall be used as would be required for the best type of ordinary ornamental plaster work.

IRVING HAMLIN

PATENTEE AND MANUFACTURER

The Evanston Sound Proof Door

TELEPHONE
Greenleaf 1975

1500 Lincoln Street, EVANSTON, ILL.

PRODUCTS

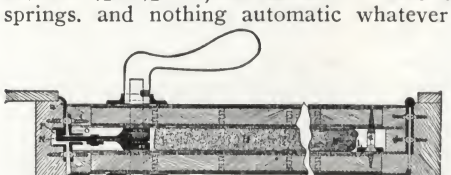
DOORS for RETARDING TRANSMISSION of SOUND:
The Evanston Sound Proof Door—one door to an opening.
The "Special" and the "High Duty" Doors for the more exacting acoustical conditions.
The "Modified Door" for Radio Broadcasting Studios.
Hamlin's Double Doors—two doors to an opening.
Hamlin's Sound Proof Sliding Doors where swinging doors are not desired.
HAMLIN FOLDING PARTITION—many doors to an opening.

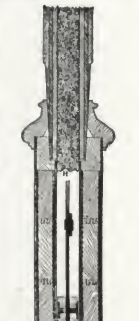
EVANSTON SOUND PROOF DOOR

Construction

A sectional door containing sound-deadening and fireproofing elements and a mechanism for hermetrically sealing the cracks at top, bottom and two sides. The space between sections is ⅞ in., the insulation almost filling the space; but leaving some degree of "flappiness" and freedom of contact, thus avoiding "bridging." It extends almost the entire area of the door, as illustrated, and is composed of two sheets of asbestos millboard, with sheet steel suspended between them. Neither vegetable or animal quilting, nor asbestos "paper" are used. Part of the insulation is fastened to one section, and part to the other.

The mechanism which connects the handle with the movable cushion at the floor, and simultaneously wedging the door into its seat against the felt-mounted stops, is of steel, massive and strong, the pivotal connections being rivets and not bolts. The movable cushion at the bottom is of 1 in. or more cross section, same mushrooming under strong leverage by direct action upon the handle into a cross section ½x1½ in., as shown. There are no springs. and nothing automatic whatever about this door. This means that in over twenty years of business, and with thousands of the doors in use, no income has accrued from repairs or replacement of parts.





Ordinary doors shrink and swell. This door retains its virtues during winter and summer variations because it is purposely trimmed small enough so it will never stick in the frame, while the stops (1 in. thick and mounted with a generous fold of felt) at all times fill the cracks. The raised threshold shown is not necessary.

In the visible hardware there is no unsightly duplication or triplication of latching devices. In this door only one latch is necessary.

Made in any style of flush or panel. Each section is ⅞ in. thick, being a completely built-up core and veneer door. Panel doors have ⅛-in. veneers, while the flush are done in crossbanded veneers. Your own jambs are usable, but they should be strong and sturdy, and provided with three 5x5 butts. Jambs, for best appearance, ought to be at least 5½ in. across the face, flat and without rabbets, so as to accommodate the thick door and the felt-mounted stops. However, narrower stops, and even thinner doors can be furnished, if conditions so require.

Doors can be paired for openings up to 8 ft. wide. Sliding doors are furnished, either vertical or horizontal. Also doors combining X-ray-proofing with this self-same fireproofing and soundproofing. Metal covered doors also are furnished which, with the internal insulation described, offer very great protection from fire.

Send for the fully illustrated catalog. The illustrations show the door in cross section, with internal insulation of hair felt that has been discarded in favor of asbestos millboard and sheet steel in various combinations of alternate thicknesses. This is because acoustical engineers now know that mere mass and weight of the materials is a very important factor in retarding sound. The door as now offered is therefore of much higher efficiency than formerly.

For making estimates please state number and size of doors of each kind, the kind of wood, and indication of panels and moulding.

The Sub-Standard Door

Thickness 2⅝ in., internal space ⅞ in., occupied by hair felt and sheet steel. Weight 6 lbs. per sq. ft. or 123 lbs. exclusive of finish hardware, in a 3x7-ft. door. This for many years was the Standard Door of which thousands are in use and which made the world soundproof-door-conscious. It is obsolete and is here mentioned for comparison with the later products.

The Standard Door

Thickness 2⅝ in., internal space ⅞ in., occupied by one thickness each of ¼ and ⅜-in. asbestos millboard and one sheet of 28-gauge steel. It will average 9 lbs. per sq. ft. or 175 lbs., exclusive of finish hardware, in a 3x7-ft. door. It was not tested, but estimated by the Director of Riverbank Laboratory to be of 32 decibels retardation.

The Special Door

Thickness 3 in., internal space 1¼ in., occupied by asbestos millboard and sheet steel. It weighs 11.6 lbs. per sq. ft. or 243 lbs. exclusive of the finish hardware in a 3x7-ft. door, and tested 35.6 decibels retardation at the Riverbank Laboratories.

The High Duty Door

Thickness 3 in., internal space 1¼ in., occupied by two sheets of ⅛-in. lead, two sheets of ¼-in. and one sheet of ⅜-in. asbestos millboard. It weighs 15.6 lbs. per sq. ft. or 326 lbs. exclusive of finish hardware, in a 3x7-ft. door.

In case of peepholes or glass panels, the glass is double in the Sub-Standard and the Standard Doors, and triple in the Special and High Duty Doors.

The Special and High Duty Doors at their hinge edges, besides the felt-mounted stops, are armed with a strip of thick felt 2 in. wide, partly embedded in the door, and under compression when door is closed.

Higher duty still may be accomplished, as there is ample room internally for heavier insulation.

The Modified Door

The Modified Door is designed for those situations where the user is protected by two doors instead of one, as in radio broadcasting, where entrance is gained through an intervening lobby having "acoustical correction" in its walls and ceiling.

Notable recent installations (1935-36-37) for the National Broadcasting Company and the Columbia Broadcasting System can be seen in their Chicago plants at Merchandise Mart and the Wrigley Building. *Send for the special circular.*

THE HAMLIN SOUND-RETARDING FOLDING PARTITION

In the Hamlin Folding Partition there was in 1924 the first attempt ever made to make folding partitions sound-retarding. The thorough methods already exhibited in the Evanston Sound Proof Door were adopted in conjunction with the very best sliding-folding hardware known. The Hamlin Folding Partition is offered confidently as being the ultimate in efficiency and thoroughness of sound-proofing methods, combined with sureness and permanency of adjustment and smoothness of operation.

For gymnasiums the common kinds are good enough; but for lecture rooms, class rooms and music rooms, a very high degree of sound retardation is necessary.

Kindly do not request estimate unless you have first examined the special catalog devoted to the Hamlin Folding Partition and are prepared to pay a higher price than for any others to which the terms "sound proof" or "sound retarding" are appended. Frankly—even the Hamlin kind still leaves something to be desired in sound retardation; and when you consider the hundreds of sq. ft. of vibrating surface and the hundreds of lin. ft. of cracks to be sealed, anything short of the most thorough soundproofing is unwise, even at a higher price for the better kind.

Complete drawings are available. Doors are 3⅛ inches thick, invariably suspended from above and guided at the floor. Doors are hinged and folded in pairs, each pair sliding to the wall independently. However, they can be furnished in the "accordion door" manner if desired.

Send for the Hamlin Folding Partition Catalog.

HARDWOOD PRODUCTS CORPORATION

NEENAH, WISCONSIN

NEW YORK, N. Y., 1730-101 Park Avenue—ASHland 4-7594 CHICAGO, ILL., 1805-75 Wacker Drive—RANdolph 7230

For Veneered Doors see File Index

EXCLUSIVE MANUFACTURERS OF THE RIVERBANK SOUND INSULATING DOORS

A Higher Degree of Sound Insulation

These doors embody results of extensive research by Dr. Paul E Sabine at the Riverbank Laboratories, Geneva, Ill., and are fabricated and sold by the HARDWOOD PRODUCTS CORPORATION, Neenah, Wis. They are built according to approved modern door construction in order to give a higher degree of sound insulation than has hitherto been obtained even in doors of great weight and thickness—and at much reduced cost.

Three Types of Doors

There are three types of Riverbank Sound Insulating Doors of the same appearance, designed to meet a wide range of acoustical needs.

Riverbank Forty-three—A 3-in. thick door, giving a measured average reduction of 43 decibels. For use where the highest obtainable reduction of sound is essential.

Riverbank Forty—A 2½-in. thick door, giving a measured average reduction of 40 decibels. For general use in broadcasting studios and other locations requiring high sound insulation.

Riverbank Thirty-five—A 1¾-in. thick door giving a measured average reduction of 35 decibels—the same reduction as the average partition wall. Can be obtained at very low cost in quantities for equipment of complete buildings.

The Laboratory measurement of sound reduction on each of these doors is the average over a range of frequencies from 128 to 4000 cycles, with the doors hung in the ordinary manner, closing against the special gasketed stops and with automatic threshold closers.

Comparison of Tests

The accompanying graph shows a comparison of similar tests made on doors of different construction and weight built for sound insulating purposes. Note that in these doors of different construction weight is the important factor in sound reduction, as shown by the fact that the plotted values fall very close to a straight line. Riverbank doors are shown on the same graph and the acoustic merit of their design is shown by the fact that with decidedly less weight the sound insulation is greater than that of the heaviest doors.

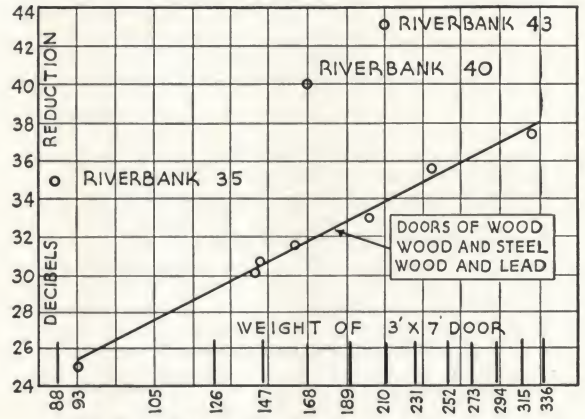


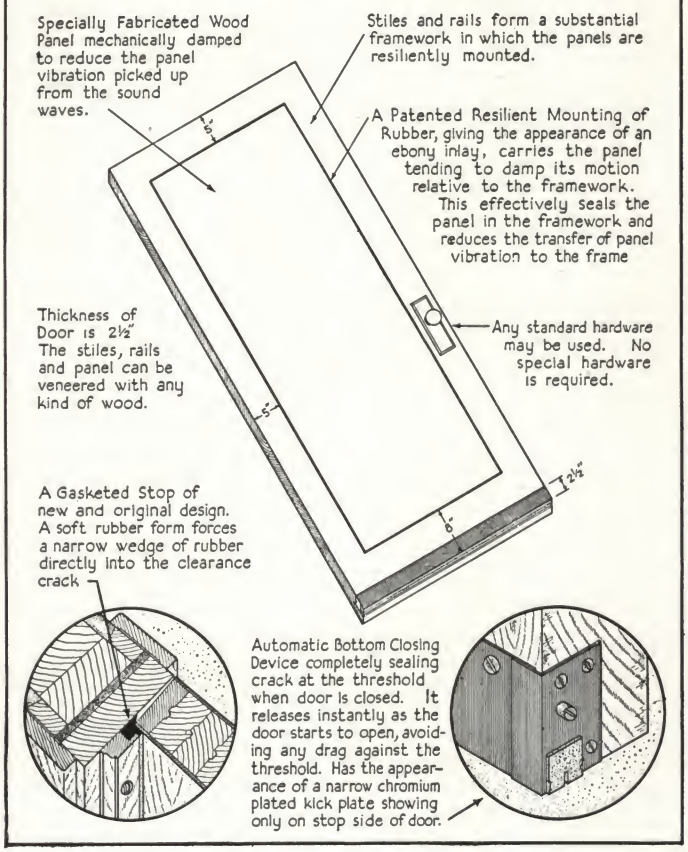
Chart of Weights and Average Reduction in Decibels

Metal Covered Doors

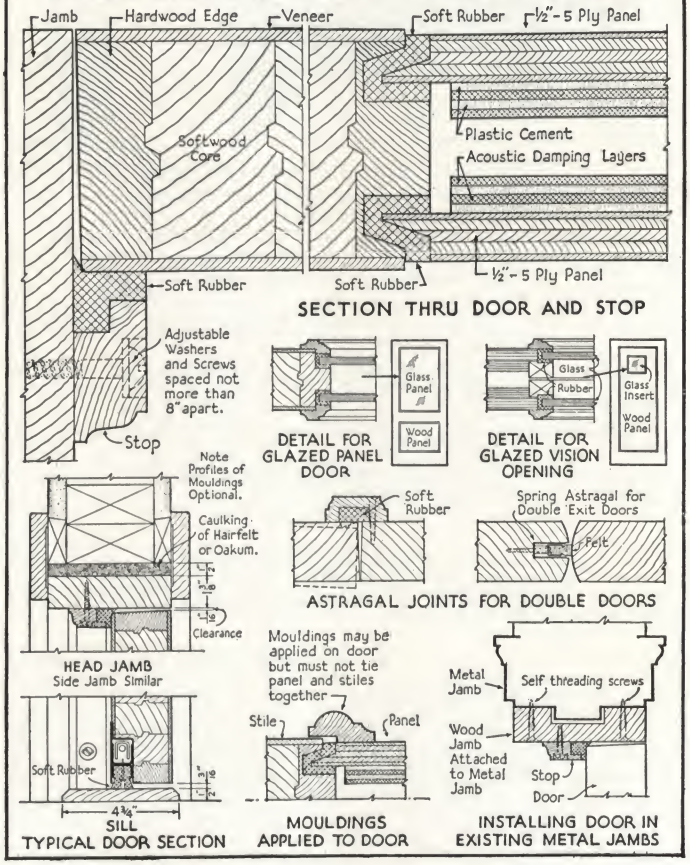
Riverbank Doors may be covered with 16 or 14-gauge steel for fire resistance or for heavy duty industrial installations. In the same manner they may be covered with Formica, Stainless Steel, or may have a baked enamel finish applied for any architectural purpose.

Send for a Manual of Riverbank Doors covering the Principles of Sound Control as Applied to Doors and full information concerning construction, installation and use of Riverbank doors.

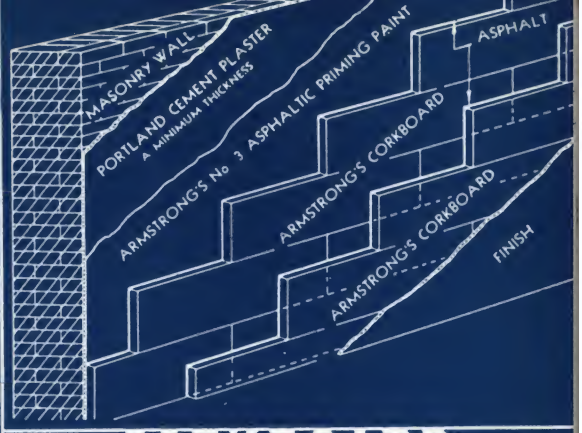
RIVERBANK FORTY SOUND INSULATING DOOR



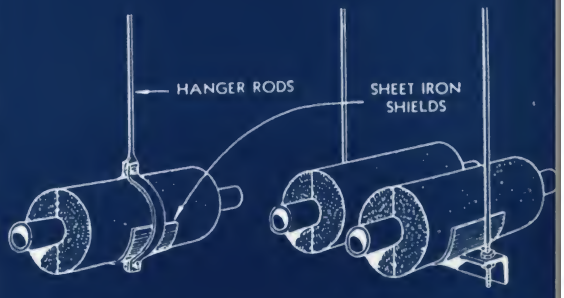
RIVERBANK FORTY SOUND INSULATING DOOR



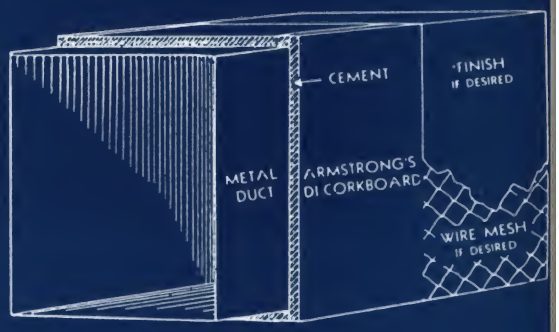
ARMSTRONG'S INSULATION AND INTERIOR FINISHES



CORKBOARD



CORK COVERING



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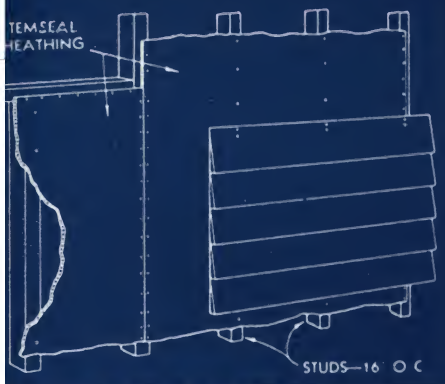

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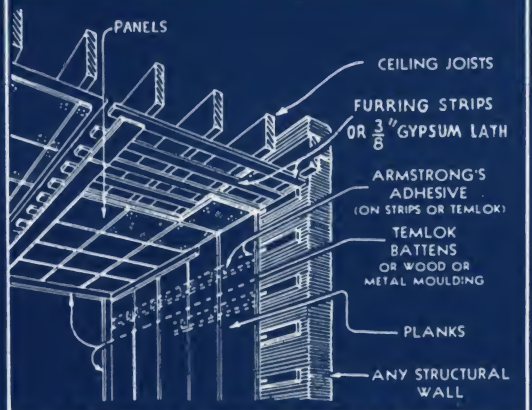
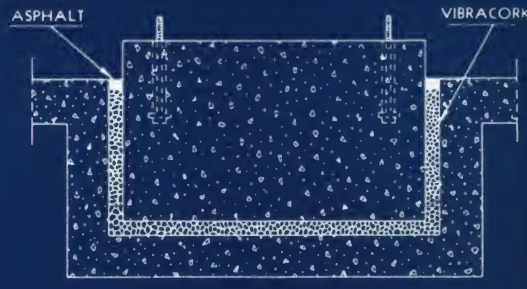


TEMLOK DE LUXE



VIBRACORK

ARMSTRONG CORK COMPANY

BUILDING MATERIALS DIVISION . . . . LANCASTER, PENNSYLVANIA

THE
ARMSTRONG CORK COMPANY

SINCE 1902, Armstrong has been a leader in the low temperature insulation field. The Company maintains extensive research facilities, and experimental and development work carried on during the past 36 years has insured users of Armstrong's Insulation maximum value and efficiency. The Company's broad experience, superior manufacturing facilities and ability, strict adherence to high standards of quality, engineering service, and constant research assure complete dependability of its substantial variety of products.

In a number of cases, installations of corkboard made 20, 25, or 30 years ago are still serving efficiently. This record of long and satisfactory service is perhaps the best evidence that corkboard provides a margin of extra value which means true economy for the owner over a period of years. It successfully meets severe service requirements.

Armstrong is the oldest manufacturer of corkboard insulation in this country. The Company also is widely known as the manufacturer of Armstrong's Linoleum. For catalog on Armstrong's Floor and Wall materials, refer to File Index.

SERVICE TO ARCHITECTS

A technical service department at the Company's main offices, in Lancaster, Pennsylvania provides architects with information relating to the properties, characteristics, and varied uses of Armstrong's Insulation products. Complete testing laboratories are also maintained at Lancaster. Any special problems in thermal insulation, acoustical correction, or vibration damping may be referred here without charge or obligation.

AVAILABLE LITERATURE

For more complete information on the various Armstrong's Insulation products and their application, write to the ARMSTRONG CORK COMPANY, Lancaster, Pa., or get in touch with a near-by office or distributor (see list on back cover). The catalogs listed below are available without charge and will be sent on request.

Armstrong's Corkboard Insulation for Cold Storage Rooms

Armstrong's Corkboard Insulation for Walls and Roofs

Armstrong's Cork Covering for All Cold Lines

How to Lessen Vibration with Armstrong's Vibracork.

Armstrong's Temlok Building Insulation Specifications (A.I.A. File 37-A-I)

Colorful Finishes That Decorate and Insulate—(Temlok De Luxe)

How to Reduce Noise or Improve Hearing Conditions (see File Index of this volume—Acoustical Section)

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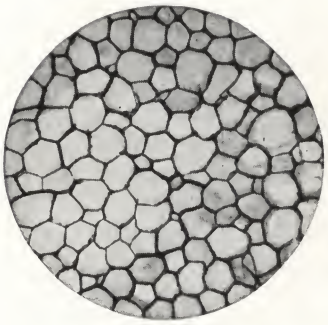
ARMSTRONG'S CORKBOARD INSULATION
FOR WALLS, ROOFS, AND DUCTS

Physical Characteristics of Corkboard

Armstrong's Corkboard Insulation is made from pure cork ground into medium coarse granules, cleaned, compressed, and then bonded and sterilized by heat without the use of any foreign binder to form solid slabs of standard thicknesses and dimensions (see below). This baking process produces a tough, strong, homogeneous board that is inherently resistant to moisture, fire, and decay.

Thermal conductivity of Armstrong's Corkboard is .27 (B. t. u. per hr., per 1″ thickness, per degree F.) at 60° F. mean temperature. (*) Its corresponding resistivity is 3.70. As with all insulating materials, the thickness of corkboard necessary for effectiveness in preventing heat losses and condensation varies with the type of construction and conditions under which it is used.



Photomicrograph showing the cellular structure of cork, the outer bark of the cork oak tree. This natural insulator is made up of millions of tiny cells each holding a minute quantity of still air. These cells sealed by nature effectively retard the passage of air and moisture.

Moisture- and Fire-Resistance. Inherently non-absorbent because its minute individual cells are naturally sealed, Armstrong's Corkboard is highly resistant to the effects of the water and air-borne vapor that are always present in moderate or low temperature insulation service. It meets the rigid standards of Federal Specification for Compressed Cork HH-C-561 and maintains insulating efficiency without disintegrating. (▲)

When exposed to flames, surface charring is produced which checks the spread of fire. Combustion ceases when the flame is removed. Armstrong's Corkboard cannot take fire from sparks or embers. In case of fire it protects the building frame.

Strength and Stability. The high strength, stability, and long life of Armstrong's Corkboard are indicated by laboratory tests and by actual performance in the field, the material lasting in many cases for more than thirty years.

Plaster applied directly on corkboard takes a strong bond because of the mechanical key. The same key gives extraordinary bonding qualities with asphalt, pitch, or similar finishes.

(*) Average of independent identical tests conducted under auspices of the Cork Institute of America by Pittsburgh Testing Laboratories and Pennsylvania State College. See "Low Temperature Insulation" published by Cork Institute of America. Formerly rated at .30 as in A.S.H.V.E. Guide based on earlier tests at 90° F.

(▲) Federal Specification HH-C-561 Cork; Compressed (corkboard) requires insulation to withstand boiling for three hours at atmospheric pressure without disintegrating and without expanding more than 2% in any direction. When this test is made on Armstrong's Corkboard, it is found to be dry inside at the conclusion of the test. Corkboard is the only insulation that remains dry under this severe test. Of course, no insulation will be subjected to such a condition in use; the test is designed to concentrate in a short time moisture conditions that ordinarily would extend over a long period of use under severe service conditions.

Workability. Armstrong's Corkboard can be nailed in place or erected in portland cement mortar, asphalt, or other adhesives. The material weighs .65 lb. per board ft., is convenient to handle, and can be cut, shaped, or sanded as required.

Cost and Uses

Armstrong's Corkboard is a building insulation material of high quality and durability. It may serve also as a plaster base, or, in modern decoration, as an interior finish, thus performing two functions at one cost.

Recommended uses include: *(1) Roof deck insulation,* particularly under built-up roofing to prevent condensation, conserve heat, or to reduce cooling costs. *(2) Floor and sidewall insulation* applied direct to masonry where no hydrostatic pressure exists. Masonry must be waterproofed. Particularly effective for eliminating surface condensation. *(3) Sidewall and attic insulation* in new or existing buildings where high quality, long life insulation is indicated. *(4) Air conditioning duct work insulation* applied direct to metal ducts to reduce heating losses and cooling loads and to prevent condensation. *(5) Low temperature room insulation,* such as wine and fur storage vaults, refrigerators, cold storage rooms, etc. Send for special data on low temperature insulation or see pages 5 to 8.

A special form of corkboard, Armstrong's Corkoustic, is available for sound deadening. Another form, Armstrong's Vibracork, lessens the transmission of vibration. See pages 11 and 12 for description and methods of use.

Armstrong's Cork in other forms is also used for low temperature pipe coverings, cylindrical tanks and other similar purposes. See pages 9 and 10 for details.

Cost of Armstrong's Corkboard is soon repaid through reduction in heating and cooling loads and gain in comfort. The use of Armstrong's Corkboard is indicated in enduring construction and high quality buildings, and wherever service conditions are severe.

Sizes

Armstrong's Corkboard is made in the following standard sizes and thicknesses. Special sizes and shapes on order.

Lengths and Widths: 12″x32″; 12″x36″; 18″x36″; 24″ x 36″; 36″x36″.

Thicknesses: 1″; 1½″; 2″; 3″; 4″; 6″.

Applying corkboard insulation on a factory roof to prevent condensation of moisture in slab or on ceiling below.

ARMSTRONG'S CORKBOARD INSULATION
FOR WALLS, ROOFS, AND DUCTS

Application Methods

General. Armstrong's Corkboard Insulation can be applied to frame or masonry walls; to wood, concrete, and steel surfaces of flat or pitched roof decks; and to exterior surfaces of metal ducts. Boards should be butted tightly and joints broken in successive rows. When installing multiple layers of corkboard, each layer should break joint with that beneath.

Insulation should run continuously over surfaces and should be carefully fitted between obstructions such as joists and rafters.

Concrete or Steel Roof Decks. Lay corkboard directly in a hot mopping of asphalt or pitch or over a 2-ply waterproofing course. Cutoffs of two plies of waterproofing fabric should be applied every 25 feet to overlap the corkboard at least 4″ and extend at least 6″ on the roof deck. Roofing can be any approved built-up type. Apply roofing as soon as insulation is in place.

Wood Roof Decks. On flat decks apply corkboard preferably with hot asphalt or pitch over a waterproofing course consisting of one layer of resin-sized sheathing and two plies of tarred felt. Built-up roofing of any suitable type can cover the insulation. On pitched roofs, apply corkboard to underside of rafters if practicable. Otherwise, nail over sheathing and apply layer of waterproofing felt over the corkboard. With thicknesses not over 1″, shingles or slate or tile roofing may be nailed to roof through the corkboard. With greater thicknesses, nailing strips should be applied over the insulation to secure shingle, slate, or tile roofing.

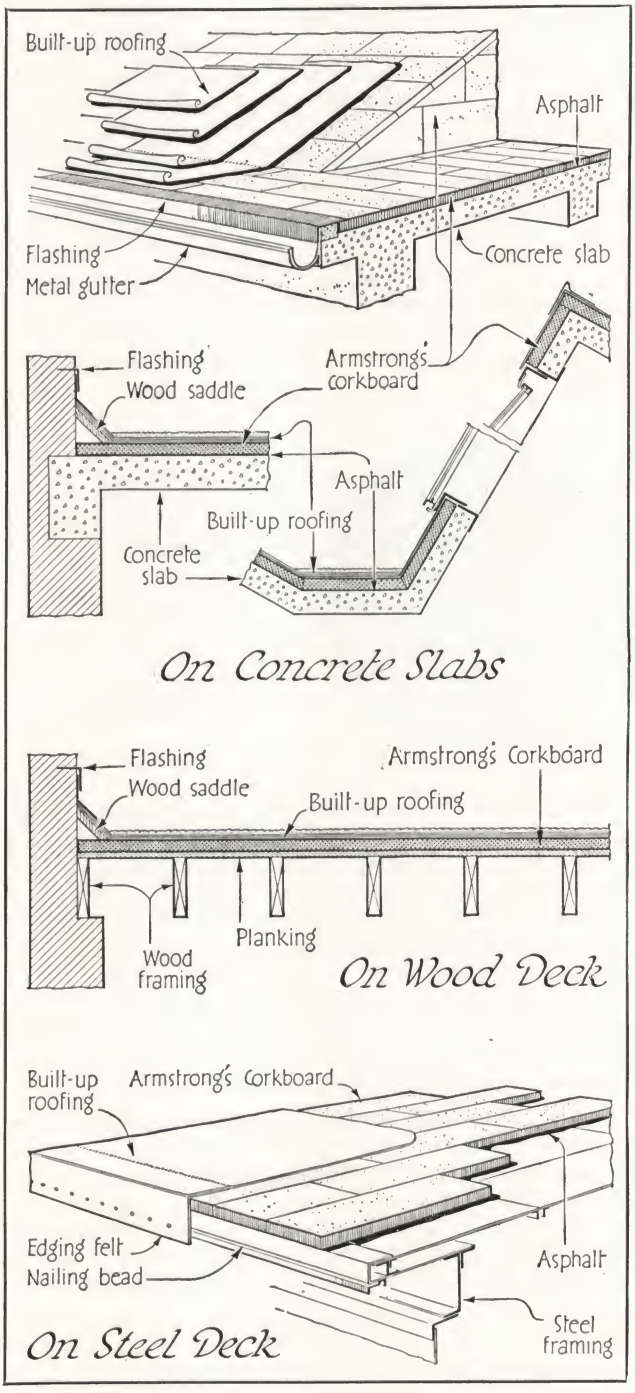
Metal ducts must be thoroughly cleaned. Dip corkboard in hot asphalt, apply to duct and support it in place with bands or wires tightly drawn around sheet metal corner angles on 9″ centers. When required, for appearance or protection from abrasion, exposed surfaces may be finished with portland cement plaster or plastic asphalt, such as Armstrong's Asphaltic Plastic Finishes. See drawing at lower right.

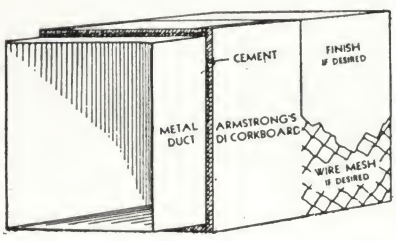
Masonry Walls. Anchor grounds permanently to masonry by standard attachments (expansion bolts, wall plugs, etc.) so that ground faces are flush with corkboard surface. Set conduits flush into walls to prevent cutting out corkboard. Set plumbing and electrical outlets and detail window and door frames in accordance with extra wall thickness due to insulation. Masonry surfaces should be prepared for bonding with cement mortar and should be dampened as required to reduce absorption. Apply ½″ stiff portland cement mortar (1 cement to 2 sand) to back of corkboard. Spread mortar evenly, keeping edges and face absolutely clean. Use no mortar in joints. Set buttered corkboards against prepared surface and press into place. Finish the exposed surface of the corkboard in accordance with plastering specifications, applying plaster directly on the corkboard.

Frame Construction. In new work, nail corkboard to inside face of studs and rafters, spanning two studs with each sheet. Use nails 1″ longer than thickness of corkboard, 3 nails to each support. In modernization work or in new work, the insulation can be nailed over sheathing on the exterior of walls and roofs. For stucco finishes, cover corkboard with waterproof paper. Apply portland cement stucco on furred or self-furring metal lath nailed through furring and corkboard to sheathing.

For insulating top-story ceilings, corkboard is normally applied to underside of joists and used as a plaster base. In modernizing, it can be secured to top of joists for economy and convenience.

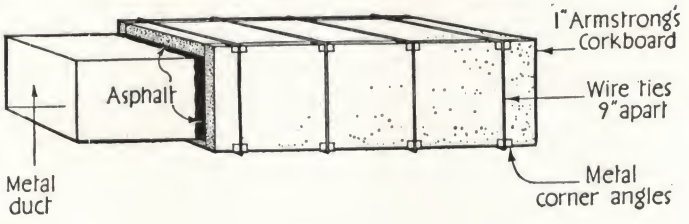
TYPICAL ROOF APPLICATIONS





Armstrong's DI Corkboard, 12x36x½″ *is intended for insulating ducts to prevent condensation. This flexible, light-weight corkboard may be erected either with adhesives or by banding.*

DUCT COVERING



ARMSTRONG'S CORKBOARD INSULATION
FOR COLD STORAGE

SPECIFICATIONS

General

Back Plaster. Where the corkboard insulation is to be applied against masonry walls in asphalt, the walls must be made true and even with portland cement plaster, mixed in the proportions of 1 part portland cement, 3 parts clean, sharp sand, and 5% hydrated lime.

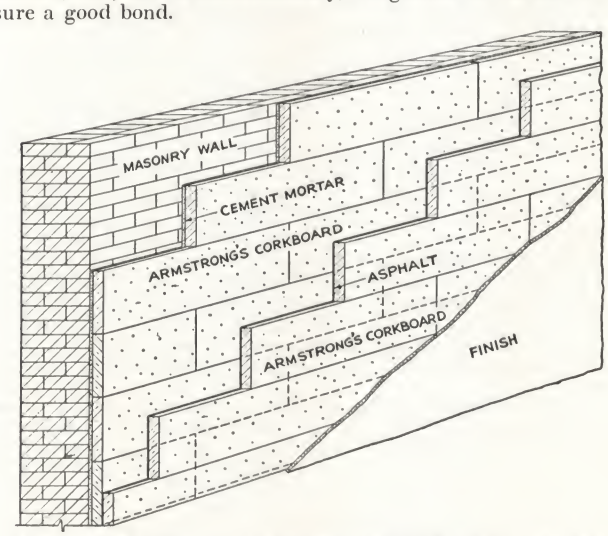
Immediately preceding the application of the plaster, wet the walls evenly with clean water. Apply the plaster in one or more coats to ¼" minimum thickness on all high points and straighten with a straightedge and float it smooth.

Where necessary, the wall surfaces must be roughened or hacked before applying the plaster to insure a good bond.

Asphalt Priming Paint. All brick, concrete, or plastered surfaces to which the corkboard insulation is to be applied in asphalt must be primed with two (2) coats of Armstrong's No. 3 Asphalt Priming Paint, applied with either brush or spray. The surfaces must be thoroughly dry before the priming paint is applied, and the first coat of paint must be allowed to dry before the second coat is applied.

Walls

Masonry Walls—Two Layers of Corkboard—First Layer Applied in Cement Mortar; Second Layer Applied in Asphalt. All masonry wall must be thoroughly cleaned of dirt, dust, loose mortar, etc., and where necessary, roughened or hacked to insure a good bond.



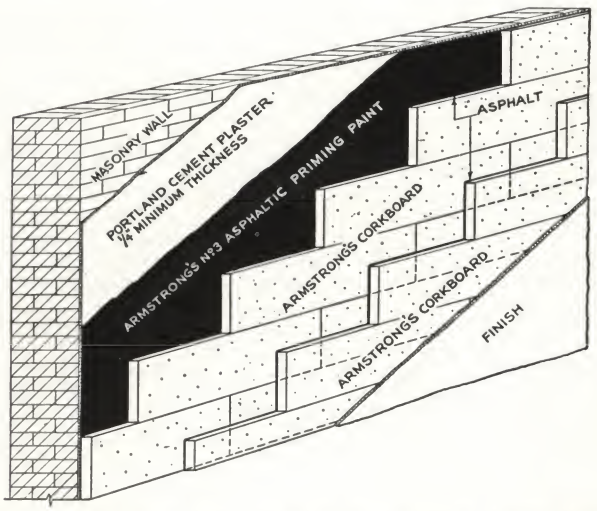
Apply the first layer of Armstrong's Corkboard in a ½" bed of portland cement mortar, mixed 1 part portland cement and 3 parts clean, sharp sand.

Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For a single layer of corkboard apply as described above for first layer.

Masonry Walls—Two Layers of Corkboard—Both Layers Applied in Asphalt. All masonry wall surfaces must be thoroughly cleaned of dirt, dust, loose mortar, etc., and, where necessary, be made true and even as described under "Back Plaster."



After the plaster has dried, prime the wall with two coats of Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard directly to this surface in hot asphalt. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For a single layer of corkboard apply as described above for first layer.

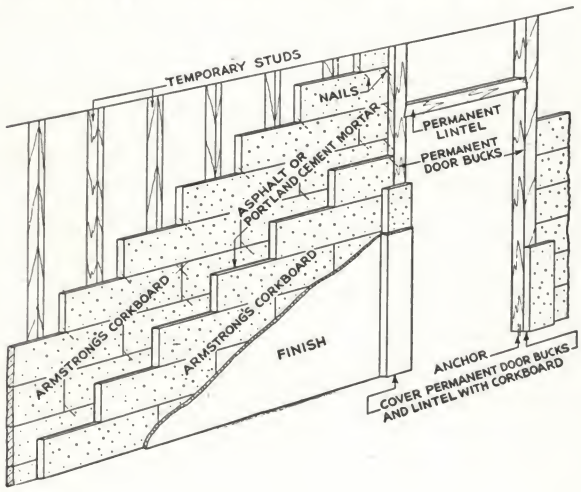
Wood Walls—Two Layers of Corkboard—Both Layers Applied in Asphalt. Directly against the sheathing of the wood walls tack one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with the edges lapped not less than 3".

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood wall with special galvanized nails of proper length. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: Where only one layer of corkboard is used, apply it as described above for the first layer.

Solid Cork Partitions—Two Layers of Corkboard—Asphalt or Cement Core. Erect temporary 2 x 4 studs on 18" centers in alignment as a guide for the self-supporting solid cork partitions.



Recommended Thicknesses of Corkboard Insulation

Room Temperature	Recommended Practice
45° and above	2"
35° to 45°	3"
20° to 35°	4"
5° to 20°	5"
— 5° to +5°	6"
—20° to —5°	8"

ARMSTRONG'S CORKBOARD INSULATION
FOR COLD STORAGE (*Continued*)

Erect the first layer of Armstrong's Corkboard on edge against the temporary studs. Securely toenail each corkboard to the abutting one, and wherever possible, also to the walls, floor, and ceiling with special galvanized nails of the proper length. All joints must be tight and all vertical joints must be broken.

(a) Erect the second layer against the first one in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of the proper length; or

(b) Erect the second layer against the first one in a ½" bed of portland cement mortar, mixed 1 part portland cement, and 3 parts clean, sharp sand, and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length.

All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes." Do not remove the temporary studs until the opposite side of the solid cork partition has been finished.

Note: For single layer of corkboard apply as described above for first layer.

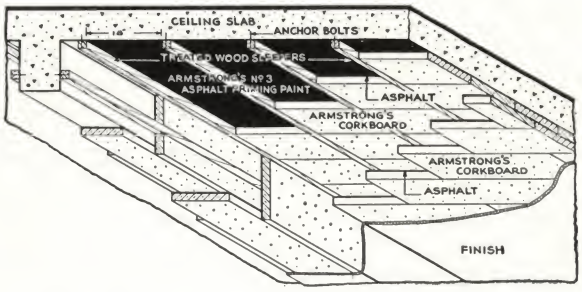
Ceilings

Concrete—Two Layers of Corkboard—First Layer Applied in Cement Mortar; Second Layer Applied in Asphalt. The concrete ceiling must be thoroughly cleaned of dirt, dust, loose mortar, etc., and be roughened or hacked to insure a good bond.

Apply the first layer of Armstrong's Corkboard in a ½" bed of portland cement mortar, mixed 1 part portland cement and 2 parts clean, sharp sand and prop it in place until securely bonded to the concrete ceiling slab. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.



Concrete—Two Layers of Corkboard—Both Layers Applied in Asphalt. Before any insulation is applied to the ceiling, fasten to the underside of the concrete ceiling slab 1⅝" x—(thickness of first layer of corkboard) sleepers with suitable anchors. The anchors and sleepers must be spaced so that the corkboard will fit tightly between, but not greater than 18" apart.

The concrete ceiling slab must be thoroughly cleaned of all dirt, dust, loose plaster, etc., and be primed as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard in hot asphalt between the sleepers and temporarily prop it to insure a good bond and toenail it to the sleepers with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. Where the second layer crosses the sleepers, nail it with special galvanized nails at each sleeper. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.

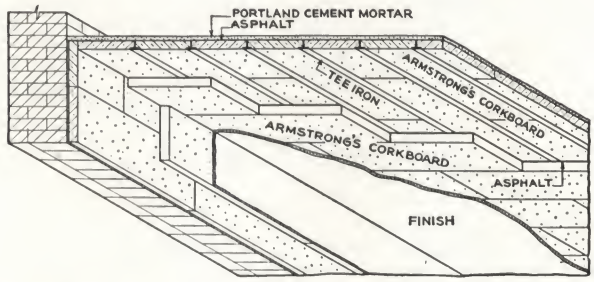
Wood—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt. Directly against the underside of the wood ceiling tack one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with edges lapped not less than 3".

Apply the first layer of Armstrong's Corkboard in hot asphalt and secure it to the wood ceiling with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Note: For single layer of corkboard apply as described above for first layer.

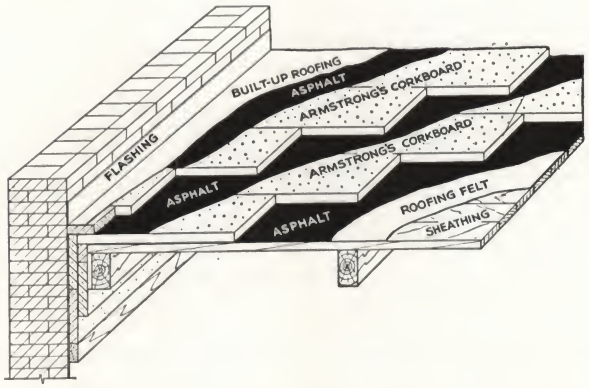
Tee-Iron Construction—Two Layers of Corkboard—First Layer Laid Between Tee-Irons; Second Applied Beneath in Asphalt. Space the tee-irons 12" or 18" apart and securely fasten them at the ends to the walls or other supporting structure. Place the first layer of Armstrong's Corkboard between the tee-irons, notching the edges so that it snugly fits the flanges of the tee-irons. Flood the top surface with a heavy coat of hot asphalt and apply a ½" or ¾" coat of portland cement mortar mixed 1 part portland cement and 3 parts clean, sharp sand, and screeded off smooth.



Apply the second layer against the underside of the first layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

Finish the exposed cork surfaces as described under "Finishes."

Wood—(Insulation on Top)—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt. A slot one inch (1") wider than the thickness of the wall insulation must be provided along all walls so that the wall and ceiling insulation will join.



On top of the wood ceiling structure lay one layer of waterproof insulating paper with the edges lapped at least 3" and sealed with hot asphalt. Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other.

Flood the top surface of the insulation with a heavy coat of hot asphalt; or mop the top surface with hot asphalt and lay one layer of fifteen (15) pound saturated roofing felt in hot

ARMSTRONG'S CORKBOARD INSULATION
FOR COLD STORAGE (*Continued*)

asphalt with all edges lapped and sealed. Tightly seal this membrane along all walls.

Note: (1) For single layer of corkboard apply as described above for first layer.
(2) Construction often used for roofs. The top surface is left uncoated to receive roofing membrane.

Steel Roof Deck—(Insulation on Top)—Two Layers of Corkboard—Both Layers Applied in Hot Asphalt. A slot one inch (1″) wider than the thickness of the wall insulation must be provided along all walls so that the wall and ceiling insulation will join.

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken in respect to each other.

Flood the top surface of the insulation with a heavy coat of hot asphalt and apply ½″ or ¾″ coat of portland cement mortar mixed 1 part portland cement and 3 parts clean, sharp sand, and screeded off smooth; or mop the top surface with hot asphalt and lay one layer of fifteen (15) pound saturated roofing felt in hot asphalt with all edges lapped and sealed. Tightly seal this membrane along all walls.

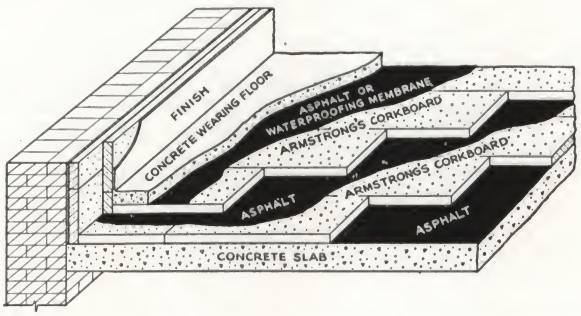
Note: (1) When only one layer of corkboard is used, apply it as described above for first layer.
(2) This construction is quite often used for roofs. In such cases the top surface of the insulation is usually left uncoated to receive the built-up roofing membrane.

Floors

Concrete Base—Two Courses of Corkboard—Both Layers Laid in Asphalt. The concrete base or floor on which the insulation is to be laid must be reasonably smooth and level. Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. After cork dust has been swept in all joints, flood the top surface heavily with hot asphalt; or, apply a waterproofing membrane consisting of two layers of fifteen (15) pound saturated roofing felt, each layer being mopped in place with hot asphalt and flash this membrane up nine (9) inches high and seal it along all walls and around all columns.

On top of this insulation install a wearing floor as described under "Concrete Wearing Floors."

Note: For single layer of corkboard apply as described above for first layer.



Wood Base—Two Layers of Corkboard—Both Layers Laid in Asphalt. On top of the wood base or floor, apply one layer of Armstrong's Asphalt Sheeting or waterproof insulating paper with all edges lapped not less than 3″ and sealed with asphalt.

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other. After cork dust has been swept in all joints, flood the top surface heavily with hot asphalt; or, apply a waterproofing membrane consisting of two layers of Armstrong's Asphalt Sheeting or two layers of fifteen (15) pound saturated roofing felt, each layer being mopped in place with hot asphalt, and flash this membrane up nine (9) inches high and seal it along all walls and around all columns.

On top of the insulation install a wearing floor as described under "Concrete Wearing Floors."

Note: For single layer of corkboard apply as described above for first layer.

Columns

Square Concrete Columns—Two Layers of Corkboard—Both Layers Applied in Asphalt. Prime the square concrete columns with Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the first layer of Armstrong's Corkboard in hot asphalt. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers or special galvanized nails of the proper length. All joints must be tight and the joints of the successive layers broken with respect to each other.

All vertical corners must be protected with suitable angle corner guards 4″-6″ high, securely fastened to the column before the finish is applied.

Finish the exposed cork surfaces as described under "Finishes."

Note: Where only one layer of corkboard is used, apply it as described above for first layer.

Round Concrete Columns—One Layer Cork Lags—Applied in Asphalt. Prime the round concrete columns with Armstrong's No. 3 Asphalt Priming Paint, as described under "Asphalt Priming Paint."

Apply the cork lags, properly beveled to fit the column, in hot asphalt, and toenail each cork lag to the abutting one with treated wood skewers or special galvanized nails of proper length. All joints must be tight. Smooth off any rough edges or corners.

Where necessary to protect the insulation, install a sheet metal column guard 4″-6″ high, securely fastened to the column before the finish is applied.

Finish the exposed cork surfaces as described under "Finishes."

Finishes

Asphalt Plastic Finish. Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with Armstrong's Asphalt Plastic Finish. The mixture for the finish consists of 50 gallons Armstrong's Asphalt Emulsion, 175 pounds asbestos floats, 275 pounds (2¾ cubic feet) dry, screened sand, 15 gallons clean water.

These ingredients are thoroughly mixed together until uniform in color throughout. Use only the smallest quantity of water necessary to give the proper troweling consistency. Apply this mixture directly to the corkboard surfaces in two coats, each approximately one eighth (⅛) inch in thickness. Before applying the first coat all voids, open joints, or broken corners must be pointed up with this mixture. The first coat must be hand dry before the second coat is applied. Trowel the second coat smooth. The final thickness of the finish must be approximately ⅛″ when dry. Finish all corners true and clean.

The finish must be thoroughly dry before any paint is applied, to guard against cracking.

Note: Asphalt plastic finish should not be applied when the temperature is below 40° F. In cold weather, provide heat to warm the spaces where the finish is being applied.

Portland Cement Plaster. Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with portland cement plaster. The portland cement plaster is mixed in the proportions 1 part portland cement, 2 parts clean, screened sand, and 8% hydrated lime, and is applied in two coats, each approximately one quarter (¼) inch in thickness.

The first coat must be keyed thoroughly to the insulation and scratched in two directions and allowed to dry before the application of the second coat. The second coat is brought to an even surface by means of a straightedge and troweled or floated smooth without ridges or blemishes of any kind.

To reduce cracking to a minimum, after the plaster has hardened somewhat, score into squares of approximately 4′-0″ each way, using a tool that will cut a clean groove through the finish to the first coat.

ARMSTRONG'S CORKBOARD INSULATION
FOR COLD STORAGE (*Continued*)

Protect all salient vertical corners with expanded metal corner beads, fastened securely in place before the plaster finish is applied. All other corners must be true and clean, either square or coved to a ¾" radius.

Note: The portland cement plaster can be strengthened and cracking of the finish minimized by reinforcing the plaster with galvanized metal lath or galvanized wire netting, securely fastened to the surface of the insulation with 1¼" galvanized staples or short, large-headed nails before the plaster is applied.

Armstrong's Mastic Finish. Finish the exposed cork surfaces (walls, ceilings, columns, solid cork partitions, etc.) with Armstrong's Mastic Finish approximately ⅛" thick and ironed on the corkboard at the factory. After the boards are in place, fill and seal the joints and nail heads with mastic seam filler in a neat and workmanlike manner.

Finish all convex corners with Armstrong's Mastic Finish Quarter Round.

Paint. a. *Armstrong's Cold Storage Paint*—The finish (asphalt plastic finish, portland cement plaster, or Armstrong's Mastic Finish) must be thoroughly dry and clean of loose mortar, dirt, and grease. Apply two coats of Armstrong's Cold Storage Paint, flowing on each coat. Allow at least twenty-four hours between the application of the two coats for drying.

Note: On portland cement plaster or concrete, a third coat may be required to cover.

b. *Aluminum Paint*—The finish (asphalt plastic finish, portland cement plaster, or Armstrong's Mastic Finish) must be thoroughly dry and clean of dirt, loose plaster, and grease. Apply two coats of aluminum paint, flowing on each coat, and allow the first coat to dry before the second coat is applied. The aluminum paint must not be mixed until it is to be used.

Note: Not all aluminum paints are suitable for application over finishes in cold storage rooms. Use only aluminum paints known to be satisfactory and specifically recommended for this purpose.

Concrete Wearing Floors

Monolithic Concrete Floor. Install a monolithic concrete wearing floor over the floor insulation three (3) inches thick at the low point and sloping one (1) inch in ten (10) feet. The concrete shall be mixed 1 part portland cement, 2 parts clean, sharp sand, and 3 parts crushed stone, and only wet enough to flush readily under slight tamping. The concrete must be handled rapidly after mixing, tamped to a compact mass and struck off at the proper level or slope as determined by previously set screeds.

Cover the floor to a 1" radius along all walls and around all columns.

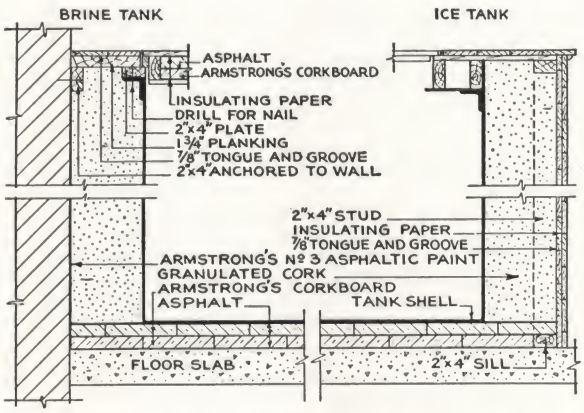
After the concrete has hardened somewhat, but is still workable, float it so as to thoroughly compact it and provide a surface free from defects and blemishes and trowel smooth with a steel trowel. Protect the floor for several days after being laid until the concrete has hardened.

Two-Course Concrete Floor. Over the floor insulation install a two-course concrete wearing floor three (3) inches thick at the low point and sloped one (1) inch in ten (10) feet. Mix the concrete base 1 part portland cement, 3 parts clean, sharp sand, and 5 parts crushed stone, and only wet enough to flush readily after slight tamping. The concrete must be handled rapidly after mixing, tamped to a compact mass and struck off at the proper level or slope as determined by previously set screeds.

Install the wearing course one (1) inch in thickness and mixed 1 part portland cement to 2 parts clean, sharp sand, before the concrete base has hardened. Float the wearing course in a manner that will thoroughly compact it and remove any defects or blemishes and then trowel smooth with a steel trowel. Cover the wearing course to a 1" radius along all walls and around all columns. Protect the floor for several days after being laid until the concrete has hardened.

Tanks—Freezing and Brine Storage

Two Courses of Corkboard on the Bottom and Granulated Cork on Sides, Wood Finish. *Bottom*—Apply the first layer of Armstrong's Corkboard on top of the concrete or wood base in hot asphalt. Apply the second layer in hot asphalt. All joints must be tight and the joints of the successive layers broken with respect to each other. Flood the top surface of the insulation heavily with hot asphalt. The insulation must extend to the outside of the insulation on the sides of the tank.



Sides—Construct retaining walls 10" and 12" away from the tank sides, consisting of 2 x 4 studs on 18" centers, sheathed on the outside with two layers ⅞" T. and G. boards with one layer of waterproof insulating paper between. Fasten the studs to a 2 x 4 plate at the bottom and to suitable framing at the top of the tank. Erect the first layer of T. and G. boards horizontally and the second layer vertically. Fill the space between the tank and the retaining wall with regranulated cork and pack it tightly in place.

Protect the top of the insulation around the tanks by a curbing consisting of two layers of ⅞" T. and G. boards with one layer of waterproof insulating paper between, laid on properly supported framing so that the top of the curbing is flush with the removable covers. Suitable constructions for the curbing are shown in the drawing.

Two Courses of Corkboard on the Bottom and One Course of Corkboard and Granulated Cork on Sides, Portland Cement Plaster or Armstrong's Asphalt Plastic Finish. *Bottom*—Apply insulation as described in Specification 1.

Sides—Erect 2 x 4 studs against the sides of the tank on 18" centers, well secured to the top of the tank and to a 2 x 4 plate at the bottom. Erect corkboard of the proper thickness against the studs, securely fastening the insulation with special galvanized nails of the proper length. Fill the space between the corkboard and the tank with regranulated cork well packed in place. All joints between the corkboards must be tight and the vertical joints staggered. Finish the exposed cork surface with portland cement plaster or asphalt plastic finish mixed and applied as described under "Finishes."

Protect the top of the insulation around the tank with a curbing as described in Specification 1.

Two Courses of Corkboard on the Bottom and Two Courses of Corkboard on Sides, Portland Cement Plaster or Armstrong's Asphalt Plastic Finish. *Bottom*—Apply insulation as described in Specification 1.

Sides—Erect studs (thickness of studs equal to thickness of first layer of insulation) against the tank 24" apart and well secured to the top of the tank and to a wood plate at the bottom. Apply the first layer of Armstrong's Corkboard against the tank sides and between the studs in hot asphalt. Toenail it to the studs with special galvanized nails. Apply the second layer in hot asphalt and additionally secure it to the first layer with treated wood skewers. Where the second layer crosses the studs, nail it to the studs with special galvanized nails of proper length. All joints must be tight and the joints of the successive layers broken with respect to each other. Finish with portland cement plaster or asphalt plastic finish mixed and applied as described under "Finishes."

Protect the top of the insulation around the tank with a curbing as described in Specification 1.

ARMSTRONG'S CORK COVERING
FOR COLD LINES

Material and Characteristics

Armstrong's Cork Covering is made in the following thicknesses: "Special Thick Brine," "Brine," and "Ice Water," for standard pipe sizes and fittings of all types; and Lagged Covers in thicknesses up to 6″ for any pipe or tank size.

Material is made from clean cork granules compressed in molds and then baked to produce a light, tough, rigid insulating material with a coefficient of heat transmission (*U*) of .28.

Moisture-Resistance. Armstrong's Cork Covering being made of pure cork, has cork's inherent resistance to the effects of water and air-borne vapor that are always present in insulation service.

Fire-Resistance. The material cannot take fire from sparks or embers. Surface charring produced upon exposure to flame checks fire and causes it to cease when flame is removed.

Ease of Installation. Being light in weight, structurally strong, and made in 3′ lengths, Armstrong's Cork Covering is easily handled. No special tools are needed. Sufficient sundries (see "Accessories") are furnished and shipped with the covering. Covering is accurately molded and fits pipe sizes exactly.

Accessories. With cork covering are supplied all sundries necessary for proper application. These include copper clad wire or steel bands and clips for securing the cemented covering in place, Armstrong's Waterproof Cement for lateral and end joints, Armstrong's Fitting Filler for spaces between pipe fittings and Fitting Covers, Armstrong's Seam Filler for surface irregularities and Armstrong's Cork Covering Paint for coating the finished covering surface.

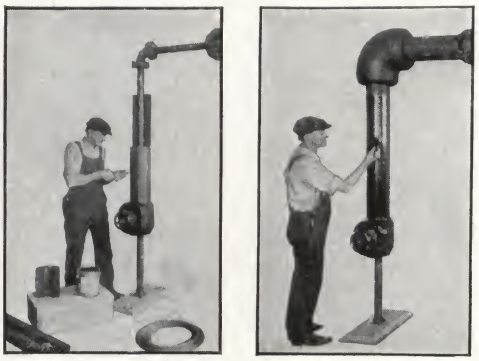
Cost. Due to its reasonable cost, ease of installation, and efficiency, Armstrong's Cork Covering returns a profit on the money invested in it. Annual returns of from 50% to over 300% of the first cost can be expected, depending on the type of installation and the cost of refrigeration.

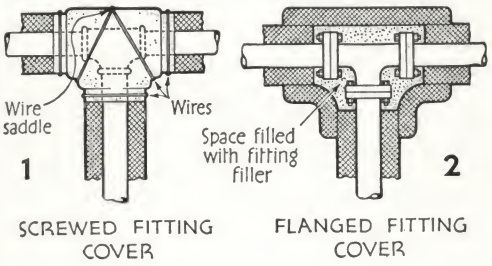
Selection of Material

Table I lists thicknesses of materials recommended for various conditions and pipe sizes. For unusual installations requiring special consideration, consult the nearest Armstrong branch office or distributor (see telephone directory) or Armstrong's Architectural Service Bureau, at the main office, Lancaster, Pa.

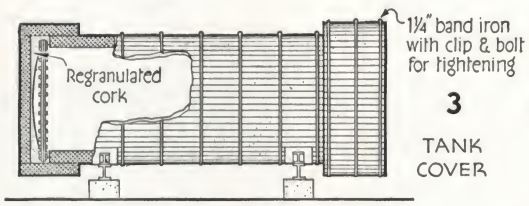
Maintenance

Owners should be advised that with regular inspection and care, cork covering which has been properly applied will give efficient service almost indefinitely. Covering should be inspected at least once a year. Loose or broken wire or bands should be tightened or replaced at once. Open joints should be sealed and the cork covering painted annually with one coat of Armstrong's Cork Covering Paint.





Above, typical molded cover for screwed fitting; center, applying molded pipe covering and flanged fitting covers; right, painting finished job with Armstrong's Cork Covering Paint. Figure 1: Method of installing screwed fitting cover, showing location of wires and straight lengths of covering butted against fitting cover. Figure 2: Molded cover for flanged fitting showing use of Armstrong's Fitting Filler and Fitting Cover lapped over straight lengths. Figure 3: Method of covering cylindrical tanks. Figures 4 and 5: Pipe hangers must not pierce Armstrong's Cork Covering.



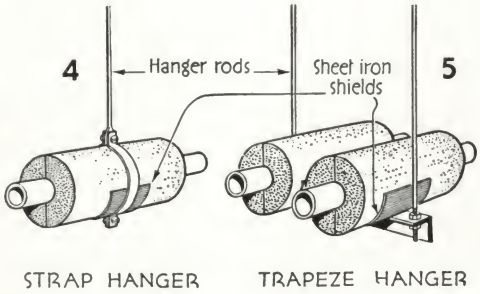


TABLE I—THICKNESSES AND USES

Type of Covering	Cork Covering SPECIAL THICK BRINE	Cork Covering BRINE THICKNESS	Cork Covering ICE WATER THICKNESS	CORK LAGGING and DISCS					
Thickness (inches)	2.63 to 4.00 *(depending on pipe size; normally less thickness required for small pipe sizes)	1.70 to 3.00 *as left	1.20 to 1.93 *as left	1.5	2	3	4	5	6
Use (Temp. range in °F.)	−25 to 0 (For brine, ammonia suction, CO_2, or other refrigerant or refrigerated process lines)	0 to +35 (for brine, ammonia suction, CO_2, or other refrigerant or refrigerated process lines)	+35 and up (drinking water, beer, etc.)	65 and up	55 to 65	32 to 55	20 to 32	5 to 20	5 and lower
				Recommendations vary with climatic conditions, cost of refrigeration, etc.					

ARMSTRONG'S CORK COVERING
FOR COLD LINES (*Continued*)

Specification and Installation

General. *Pipe lines* must be clean of all rust, scale, and dirt; must be absolutely dry and free from frost; all connections must be tight before Armstrong's Cork Covering is applied. *Hangers* must be on outside of covering and may be strap or trapeze type. Protect covering at hangers as shown in Figures 4 and 5, with sheet iron shields of gauge shown in Table II. *Spacing of pipes* must be as shown in Table III, although where cramped conditions are unavoidable, Armstrong's Cork Centers may be used.

Order of installation of the covering and fitting covers varies with the type of fitting (screwed or flanged). When applying molded covering, if fittings are screwed, apply fitting covers first and wedge straight runs between fitting covers; if fittings are flanged, cover straight runs first, wedging covering between flange bolts, and applying fitting covers last. When covering is lagged, apply straight runs first, wedging covering between fittings, and apply fitting covers last. Methods of finishing are similar for all types, see "FINISHING." (Complete instructions for installing and finishing are furnished with each shipment.)

Method of Application. Apply sectional covering with all end joints broken by starting with half section pieces 18″ long and full 36″ lengths. All longitudinal joints shall be on the top and the bottom of the pipe. Use Armstrong's Waterproof Cement on all longitudinal and end joints and secure in place with copper-clad steel wire or steel bands.

Apply molded fitting covers with Armstrong's Waterproof Cement on all joints and secure in place with copper-clad steel wire or steel bands. All spaces between covers and fittings must be carefully filled with Armstrong's Fitting Filler.

For pipes larger than the sizes for which molded covering and fitting covers are made, use Armstrong's Cork Lagging beveled to the proper diameter. When lagging is factory-assembled into half-section form, its application is the same as for sectional covering. When lagging is assembled on the job, all end joints must be broken by starting with alternate 18″ and 36″ length lags. Use Armstrong's Waterproof Cement on all joints and secure lags in place with copper-clad wire or steel bands.

Screwed and flanged fittings larger than sizes for which molded covers are made must be covered with flanged fitting covers made from Armstrong's Cork Lagging. When lagged fitting covers are factory-assembled into half-section form, application is the same as for molded fitting covers. If lagging for fitting covers is assembled on the job, all lagging must be carefully assembled according to instructions included with shipment, using Armstrong's Waterproof Cement on all joints and securing the insulation in place with copper-clad wire or steel bands. All spaces between covers and fittings must be carefully filled with Armstrong's Fitting Filler.

Note 1: In all cases where a pipe passes through an insulated wall into a refrigerated room, the covering shall extend 1″ beyond the wall inside the room. *Note 2:* Wall and floor openings for insulated pipes must be large enough to allow the full thickness of the covering to be used.

Wiring or Banding. Copper-clad steel wire or steel bands are furnished with each shipment and must be used. All wires and bands must be applied straight and tight. With sectional covering, use at least six wires or bands per section. With molded fitting covers, use four wires or bands per cover for screwed fittings, and six for flanged fittings. With lagged covering and fitting covers, use the same as for molded covers.

Finishing. Fill all joints and seams and smooth all chipped and raw edges of covering and fitting covers with Armstrong's Seam Filler. Paint one coat Armstrong's Cork Covering Paint.

Weatherproofing is required for all lines running through refrigerated rooms, shafts, or tunnels, or on lines exposed to weather. Weatherproof jackets on straight runs shall be one layer of 2-ply roofing paper with 2″ sealed laps made to form watersheds and secured with copper-clad wire or steel bands on 9″ centers. Paint weatherproof jacket with one coat of Armstrong's Cork Covering Paint.

Fitting covers shall be weatherproofed with two separate coats of Armstrong's Weatherproofing Plastic applied to approximately ⅛″ total thickness and brought over fitting cover edges to seal with the weatherproof jacket on straight runs.

Membrane Tape Finish. For added protection, cork covered lines exposed to severe conditions in dairy and ice cream plants and industrial plants may be finished with membrane tape. Before painting covering, apply membrane tape 3″ to 6″ wide to covering and fitting covers. Make tape conform to curvature of fitting coverings, using a combination of wrapping and stripping to cover entire surface. Wrap tape spirally on straight runs of covering, lapping edges ½″. Paint with one coat of Armstrong's Cork Covering Paint.

Canvas Finish. Where a decorative finish is desired on exposed lines in such places as hotels, restaurants, and hospitals, cover with 8-oz. canvas painted with several coats of a decorative paint. After covering is completely installed and painted, apply separately one or two layers of 25-lb. resin-sized paper, lapping edges 1″. Stretch 8-oz. canvas tightly over covering and fitting covers and sew all seams neatly, using blind stitches on exposed seams. Size the canvas thoroughly, and when dry, paint with two coats of good quality decorative paint as selected.

Cylindrical Tanks. Insulate all cylindrical surfaces with one layer of Armstrong's Cork Lagging (see Table I for thicknesses), beveled to correct diameter and with mineral rubber finish ironed on both sides at factory. Apply the lags with broken transverse joints using Armstrong's Waterproof Cement on all joints. Secure lagging with galvanized iron bands spaced not over 12″ apart and drawn tight by bolts through clips or with a suitable tightening tool.

Insulate ends of tanks (flanged or welded) with discs of Armstrong's Cork Lagging of same thickness. All spaces between tank and lagging must be filled with Armstrong's Fitting Filler, and spaces between discs and tank heads must be filled with regranulated cork. After all insulation is applied, fill all seams and smooth chipped and raw edges with Armstrong's Seam Filler, and paint entire surface with one coat of Armstrong's Cork Covering Paint.

TABLE II—GAUGES OF HANGER SHIELDS

Hanger Type and Pipe Size	Gauge, Galvanized Sheet Iron Shield
Strap Hangers	18 ga.
Trapeze Hangers, pipe ¼″ to 2½″	16 ga.
Trapeze Hangers, pipe 3″ to 6″	14 ga.
Trapeze Hangers, pipe 7″ and up	12 ga.

Shields must extend 4″ each side of hanger and up to center line of pipe.

TIE WIRES AND BANDS

Copper-clad steel wire or steel bands will be supplied by the Armstrong Cork Company with each shipment, in proper sizes and with recommended spacings, for each portion of the job.

TABLE III—PIPE SPACING

Covering, Fitting Types, Pipe Sizes	Between Surfaces of Parallel Bare Pipes (inches)	Between Surfaces of Bare Pipe and Adjacent Surface (inches)
BRINE THICKNESS:		
Screwed Fittings, ¼″ to 6″ incl.	8	6
Screwed Fittings, over 6″	14	8
Flanged Fittings	14	8
SPECIAL THICK BRINE:		
Screwed Fittings, ¼″ to 3″ incl.	10	8
Screwed Fittings, over 3″	18	12
Flanged Fittings	18	12
ICE WATER THICKNESS:		
Screwed Fittings, ¼″ to 6″ incl.	6	4
Screwed Fittings, over 6″	10	5
Flanged Fittings	10	5

ARMSTRONG'S VIBRACORK
TO LESSEN VIBRATION TRANSMISSION

Armstrong's Vibracork provides an economical and practical means of guarding against the unpleasant and destructive effect of vibration. It prevents lowered efficiency, hastened depreciation, irritating noises, and other natural results of excessive vibration.

Vibration from motors and engines, fans, blowers, pumps, printing presses, mixers, generators, elevator machinery, and similar equipment can be quieted with a cushion of Vibracork. Floors of buildings can also be effectively isolated.

Vibracork is a resilient board made of pure granules of cork, compressed and baked under pressure. Selection of a suitable grade of cork and proper granule size aid exact control of the density of the material and assure its having the desired characteristics. The boards are strong and durable, and maintain their physical characteristics indefinitely when properly used.

Sizes and Thicknesses

Armstrong's Vibracork is supplied in boards 12″ wide and 36″ long in thicknesses from 1″ to 6″. Other dimensions less than 12″ x 36″ can be cut to order. Standard thicknesses are 1″, 2″, 3″, and 4″. For most applications, the 1″ and 2″ thicknesses are recommended, and the 2″ thickness should be used most frequently.

Two Densities

Armstrong's Vibracork is made in two densities suitable to meet any machinery isolation problem encountered in ordinary practice.

The characteristic resilience of Armstrong's Vibracork results from the thousands of minute air cells which make up the structure of cork. Unlike other materials, Vibracork never hardens nor takes a set if loaded within its proper limits. If applied properly, it will not disintegrate or change its physical characteristics in any manner but will give long and satisfactory service.

Installation

To secure the desired result, it is essential in installing Vibracork to keep the following points in mind:

(1) Avoid through-metal, such as through foundation bolts, direct contact with metal base and concrete, etc.

(2) Through-bolts, if unavoidable, should be properly isolated.

(3) The area of Vibracork used should be so designed as to give a deflection in the Vibracork which will enable it to serve best as a spring in the damping of vibration.

(4) Where possible, a heavy foundation should be provided as it aids in the damping by lowering the center of gravity of the machine, and by giving additional weight and assuring better compression (spring) conditions in the Vibracork.

In order to secure a satisfactory result, Vibracork must be under a sufficient amount of compression to allow its resiliency to become effective. The load must not be so great, however, as to destroy the resiliency. To secure adequate compression, it is often necessary to apply isolation on limited areas only. The accompanying diagrams illustrate several methods of application. Where at all possible, the floating type of foundation should be used. If this is not possible, the use of pads is recommended with an indirect bolt connection to avoid a through contact.

The greatest isolating effect will be secured by using as heavy loads and as light a density as is possible and practical.

TABLE OF SUGGESTED LOADINGS

Standard Density Vibracork 1500—5000 lbs. per square foot
Heavy Density Vibracork 5700—8500 lbs. per square foot

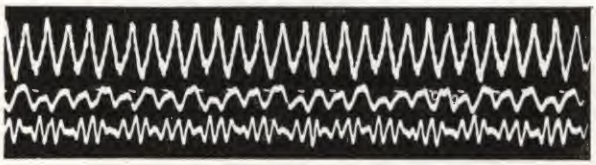
Methods of Application

Practically any type of machine may be isolated with Vibracork. There are two general methods of application, both subject to variation. In the first method, the foundation pit is finished with concrete, and then lined on both bottom and sides with Vibracork of the proper thickness and density, and set in hot asphalt. A suitable waterproof paper applied in hot asphalt is put over the cork. Following that, the concrete for the foundation proper is poured in. This construction should be used wherever possible, especially with heavy machinery.

In the second method, the Vibracork is applied directly between the machine's bedplate and the floor or foundation to which it is fastened. Where the load of the machine is heavy enough in proportion to the area of the base, the isolation may be applied as a continuous layer. In most cases, however, the machinery isolation must be applied over a limited area only as shown in figures III, IV, and V on next page.

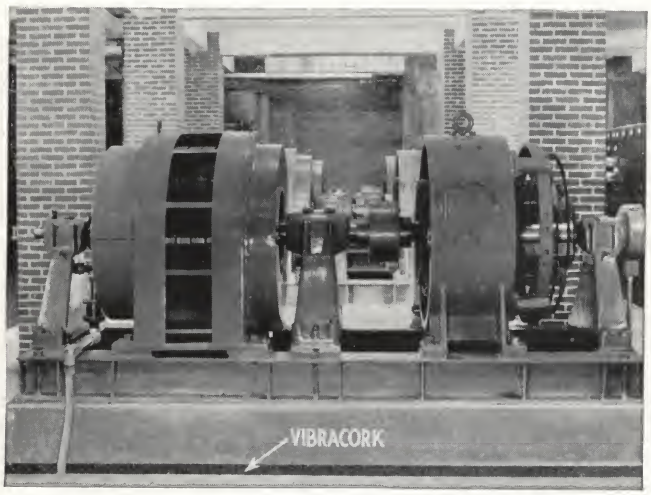
In cases where direct coupled machines are set up on independent foundations, they should be tied together with a continuous bedplate. Where Vibracork is used between the machine and foundation and is not protected by being applied in channel-irons, it should be covered with light telescopic metal pans. These will protect it from abrasion, oil, and other chemicals.

Vibracork can easily be cut to size with an ordinary carpenter's saw. Where pads of Vibracork are used they are frequently secured with Armstrong's 236 Cement or hot asphalt.



Without Vibracork. Z shows the vertical vibration. Y shows the horizontal vibration at 90° to the shaft. X shows the horizontal vibration parallel to the shaft.
The timing dots are 1/2000 of a minute apart.

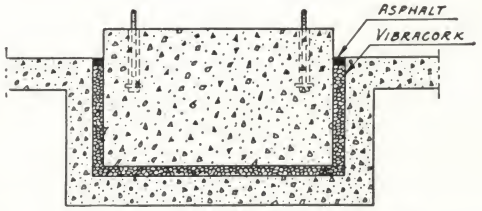
With Vibracork. Z shows the vertical vibration. Y shows the horizontal vibration at 90° to the shaft. X shows the horizontal vibration parallel to the shaft.
The timing dots are 1/2000 of a minute apart.



Armstrong's Vibracork, used to line the motor generator foundation pit in the new Supreme Court Building, in Washington, D. C., insures elimination of nuisance caused by vibration. Architects, Cass Gilbert and David Lynn.

ARMSTRONG'S VIBRACORK
TO LESSEN VIBRATION TRANSMISSION
TYPICAL METHODS OF APPLYING VIBRACORK

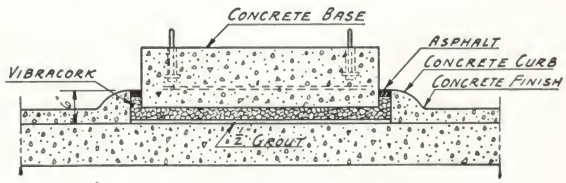
Fig. I



TYPICAL DEPRESSED FOUNDATION

Isolation of single or multiple machine units may be accomplished most satisfactorily by the pit type foundation as illustrated above.

Fig. II

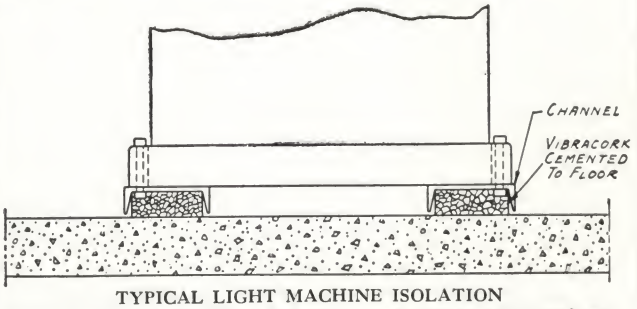


FLOATING FOUNDATION

For Existing Suspended Slab

Light or heavy motor generator sets, pumps, and compressors may be placed as above on existing suspended concrete floors.

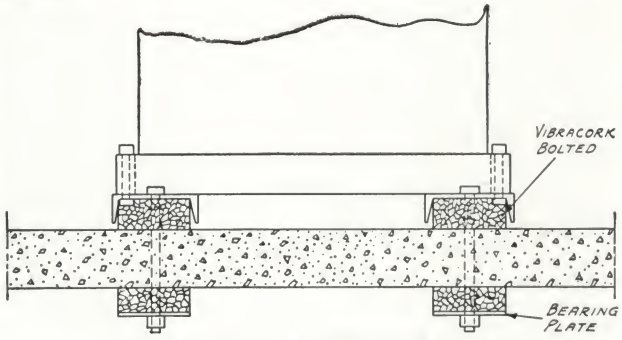
Fig. III



TYPICAL LIGHT MACHINE ISOLATION

Method of isolating machines with strips of Armstrong's Vibracork set in channel irons and permanently cemented to the concrete floor.

Fig. IV

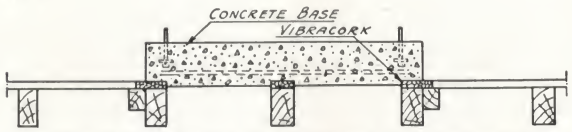


TYPICAL LIGHT MACHINE ISOLATION

With Through-Bolting

A method of isolating light machines employing channel-irons but with the machine bolted through the floor and an extra pad of cork below.

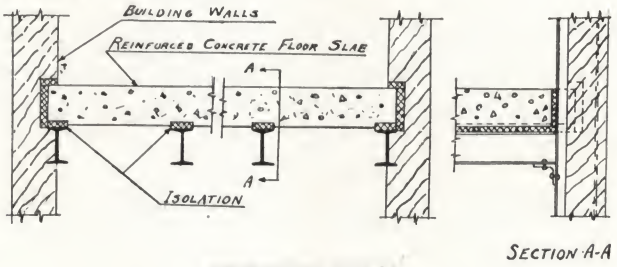
Fig. V



FOUNDATION—MILL TYPE FLOOR CONSTRUCTION

A heavy concrete floating foundation will serve in some cases if the wood floor is braced and proper concentration of load is arranged.

Fig. VI

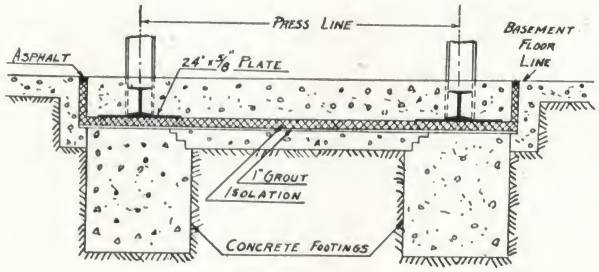


SUSPENDED FLOOR

Entirely Isolated

Entire building floors may be completely isolated for either light or heavy manufacturing. The manner of installing the isolation will depend upon the type of building construction as indicated above.

Fig. VII

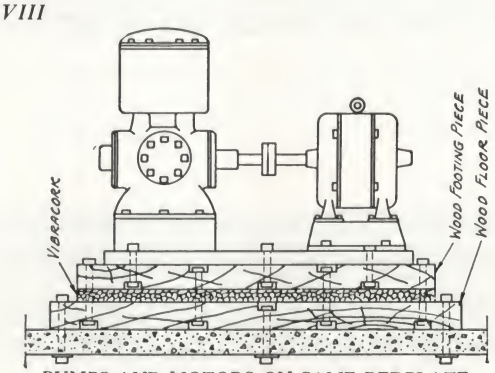


TYPICAL PRESS FOUNDATION

Large Newspaper Plants

One of the approved methods of isolating printing presses in large newspaper plants. This may be varied to suit building construction.

Fig. VIII



PUMPS AND MOTORS ON SAME BEDPLATE

Two or more units on the same bedplate installed on existing wood or concrete floors. This isolation method is particularly adapted for small motor generator sets, pumps, and other light-weight machinery.

ARMSTRONG'S TEMLOK BUILDING INSULATION
DESCRIPTION AND SPECIFICATIONS FOR INSTALLATION

Characteristics and Properties

Armstrong's Temlok is a fibreboard insulation made from heartwood fibres of long leaf southern yellow pine under controlled conditions which assure uniformity and adherence to performance standards. It is fabricated in rigid forms and in solid thicknesses from ½" to 1½" without laminations. The material is light in weight (1.2 lbs. per bd. ft.), can be easily handled in large sheets and can be cut, sawed, and worked with ordinary tools.

Temlok's properties make it adaptable to a wide variety of uses in all types of buildings where a combination of high insulating value, low moisture absorption, adequate structural strength, and excellent plaster adhesion is required. For insulation and structural use Temlok is made in board and lath forms. For use as an insulating interior finish it is available factory-finished in Temlok De Luxe.

Thermal conductivity averages .33 B. t. u. per hr. per sq. ft. per degree F. per in. thickness at 75° F. mean temperature.

Insulation value of Temlok depends upon the thickness of the material.

Moisture-Resistance. The resinous character of Temlok fibres makes the material naturally resistant to moisture. Tests show only 2.2% by volume of water absorption. Percentage for this characteristic allowed by U. S. Commercial Standard CS42-35 is 5% for insulating building board and 10% for roof insulating board.

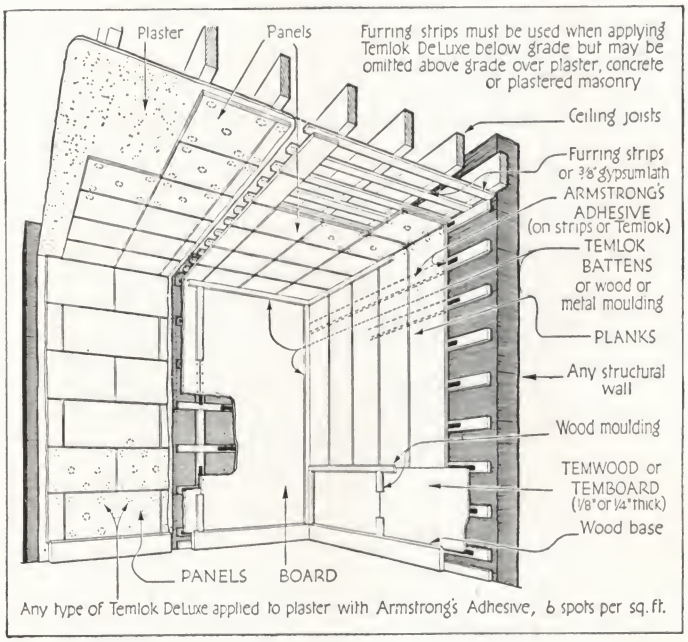
Plaster Bond. The same standard allows 600 lbs. per sq. ft. as the minimum plaster adhesion requirement. The plaster bond for Temlok is 1,024 lbs. per sq. ft.

Strength, both transverse and tensile, and the limits of deflection and linear expansion of Temlok exceed requirements of the U. S. Department of Commerce Commercial Standard CS42-35 for Fibre Insulating Board, dated June 24, 1935, and Federal Specification LLL-F-321-A.

Color and Texture. Natural color of Temlok is golden buff. It has a mat-like texture.

For use as an insulating interior finish, Temlok De Luxe is available factory-finished in six colors. This material has a smooth surface and is made in boards, planks, and panels.

METHODS OF APPLYING TEMLOK DE LUXE



Any type of Temlok DeLuxe applied to plaster with Armstrong's Adhesive, 6 spots per sq. ft.

Range of Application

Temlok products in one or more forms are designed for use in three general ways:

1. **For Sheathing**—As an insulating sheathing as well as an essential part of a frame structure on walls applied under wood siding, stucco, masonry veneer, shingles, slate, and similar types of materials. With Temseal no building paper is required.

2. **For a Plaster Base**—As an insulating lath on exterior walls, partitions, and ceilings to receive interior plaster, Temlok is applied directly on studs and joists in frame construction and on furring strips over masonry surfaces.

3. **For Interior Finish**—As an insulating, decorative, and sound absorbing surface finish for walls and ceilings in houses, schools, offices, shops, restaurants, and theatres. See "Temlok De Luxe" table.

TABLE A—TEMSEAL SHEATHING—TEMLOK LATH

Product	Lengths	Widths	Thickness	Finish	Color
Temseal Insulating Sheathing	6′, 7′, 8′, 8½′ 9′, 9½′, 10′, and 12′	4′	25/32″	Asphalt Covered with Kraft Paper	Kraft
Insulating Lath	4′	1′-6″	½″, ¾″, 1″, and 1½″	Standard	Natural

TABLE I—TEMLOK DE LUXE UNITS

COLORS: {All forms of Temlok De Luxe are available in the colors: white, cream, ash, walnut, coral, and green.

Product	Lengths	Widths	Thickness	Edges
Insulating Board	6′, 7′, 8′, 9′, 10′, and 12′	4′	▲½″, ¾″, and 1″	Square finished
Insulating Planks	6′, 8′, 9′, 10′, and 12′	6″, 8″, 10″, 1′, and 1′-4″	▲½″, ¾″, and 1″	V bevel on long edges
***Insulating Panels**	2′-8″ and 4′	1′-4″ and 2′	▲½″, ¾″, and 1″	V bevel on all edges
***Insulating Panels**	1′, 1′-4″, and 2′	1′, 1′-4″, and 2′	▲½″, ¾″, and 1″	V bevel on all edges
Border Strips	4′ and 8′	1′	▲½″ and 1″	V bevel on long edges (4′ strips also beveled on short edges)
Batten Strips	6′, 7′, 8′, 9′, 10′, and 12′	2″, 2½″, and 3″	½″ and 1″	Plain bevel on long edges

(*) Other sizes obtainable. ▲1½″ Thickness available on order.

ARMSTRONG'S TEMLOK BUILDING INSULATION

DESCRIPTION AND SPECIFICATIONS FOR INSTALLATION (*Continued*)

Temseal Vapor-Proofed Sheathing

Temseal Sheathing is reinforced and sealed with a coating of asphalt and a layer of tough kraft paper. This seal assures high structural strength and in addition, resistance to infiltration of air and moisture. Building paper is not required when Temseal is used. For sizes see Table A.

Apply Temseal with large headed nails 1½" long. Nail first to intermediate studs using 6" spacing. Nail every 4" on edges.

Temlok Insulating Lath

Size of Temlok Lath appears in Table A. Temlok Lath should be nailed with five nails at each support. Nails should have large heads and be at least 1" longer than thickness of lath.

Over Temlok Lath use gypsum cement or gypsum wood fibre plaster for both scratch and brown coats. Do not use lime plaster except over brown coat.

How to Specify Temlok De Luxe

In addition to Table II, carpenter specifications should cover:

1. **Scope of Work**—List definitely the areas to be surfaced with Temlok De Luxe. If more than one thickness is to be used, list separately and define areas for each.

2. **Classification of Product**—Specify by name, size, and thickness the particular units of Temlok De Luxe to be applied.

3. **Limiting Structural Conditions**—Specify construction procedure when required to assure satisfactory performance of Temlok De Luxe after installation. This applies particularly to the preparation of sub-bases such as old and new plaster, concrete, brick, tile, or stone masonry or solid wood.

4. **Care in Handling**—State that the completed installation must be level, all edges and corners true, all units in alignment, and all joints tight. Finish of Temlok De Luxe must be kept clean. Mechanics should work with clean hands. A moist cloth and dry towel, or clean cotton gloves are recommended as a part of their equipment.

TABLE II—SPECIFICATION RECOMMENDATIONS FOR USE OF TEMLOK DE LUXE

PREPARATION OF SUB-BASES

PLASTER

New Plaster. Omit white coat. Trowel brown coat to a true, even, reasonably smooth finish and size. Plaster must be thoroughly dry before Temlok De Luxe is applied.

Old Plaster. If covered, remove paper or paint, scratch plaster with a wire brush. If uncovered, clean thoroughly. If porous or dusty, coat with size. Roughen unusually smooth hard surfaces with sandpaper or scratching tool.

CONCRETE

Allow new concrete to dry thoroughly, then size. Clean and roughen old concrete as for old plaster.

Walls. If surface is not true and level, set 1"x4" furring strips 6", 8", or 12" o.c. (*) secured to concrete by expansion or anchor bolts and set so that edges of Temlok De Luxe units will be centered on the strips. Shim as necessary to produce level surface.

Ceilings. To support furring strips on rough surfaces, place 2" x 4" joists 16" o. c. and bolt 3' to 4' o. c. For joists on edge bolt up to 6' o. c. nail 1" x 4" furring strips 6", 8", or 12" o. c. at right angles to joists to provide bearing and joint centering for Temlok units.▲

MASONRY

Above Grade. Walls of brick, hollow tile, stone, etc., should be plastered smooth, plumb, and true and prepared for Temlok De Luxe as for new plaster. 1" x 4" furring strips (*) secured on 8" to 12" centers or gypsum lath on furring provides a suitable base for application of Temlok De Luxe on masonry walls above grade.

Below Grade. On all masonry walls below grade furring strips are required. Apply Temlok against furring which permits vertical circulation of air between Temlok and wall.

WOOD

Framing Members. For application of panels or planks provide 1" x 4" furring strips (*) 6", 8", or 12" o. c. at right angles to studs or joists facenailed at each support with at least two 8d nails. Allow ⅛" space between ends of strips for expansion. Shim strips if needed to insure level surfaces.

Solid Wood. For satisfactory application of Temlok De Luxe, surfaces must be of smooth surfaced boards. Securely nail existing surfaces to prevent excessive contraction and expansion. Boards of new ceilings should not be driven tightly longitudinally or laterally, but facenailed with at least two nails at each joist. Where paint is not well bonded to wood remove it or roughen surface well with coarse sandpaper.

METHODS OF APPLICATION

CEMENTING

It is recommended that all except board units of Temlok De Luxe be installed by cementing to properly prepared bases with waterproof Armstrong's Adhesive. This compound provides a strong, permanent bond between Temlok and wood, plaster, gypsum board, or concrete.

Flat Surfaces. Apply Armstrong's Adhesive to back of Temlok De Luxe in uniform spots about 2¼" in diameter and ¼" thick. Keep adhesive about 1" from edge of Temlok units and allow 5 spots per sq. ft. of Temlok material. On units 12" wide or wider daub an additional row of spots near center. Place Temlok De Luxe against surface 1 in. from final position and slide into place under pressure. With large Temlok De Luxe units, plumb every third unit.

Furred Surfaces. Apply Armstrong's Adhesive either on the back of Temlok De Luxe units or, on walls, directly on face of furring strips. After sliding material in place, spots should nearly cover the furring strips. Avoid forcing adhesive through joints between units.▲

NAILING

Facenailing. Used ordinarily only on Temlok De Luxe Boards. Nail first to intermediate studs or furring strips with fine finishing nails driven at an angle 6" apart and about 1" longer than thickness of Temlok De Luxe. Nail heads should be countersunk. To avoid nail marks, Temlok De Luxe Boards may be cemented to intermediate studs. Nail around units at least ⅜" away from edges, using 8d common nails on ¾" and 1" material and 6d common nails on ½" material, spaced 4" apart. Joint battens can be cemented with Armstrong's Adhesive or secured with finishing nails set at an angle and driven through Temlok to penetrate supports about 1 in. Planks on furred surfaces may be facenailed at top and bottom if moulding or baseboard will concealed nailing.

Toenailing—Used to Supplement Adhesive. Units may be secured with one or two nails concealed in beveled joint.

(*) Furring strips on both walls and ceilings should be well-seasoned, straight lumber, 1" x 4" for 12" and 16" centering and 1" x 3" for 6" and 8" centering. Centering of 16" is not recommended except for installation of Temlok De Luxe Boards. For large units of Temlok De Luxe for installation with vertical jointing, furring strips should be set horizontally. For horizontally jointing or application of smaller units, set furring strips vertically. For most satisfactory installation of Temlok De Luxe Panels or Planks, furring strips should be set 6" or 8" o. c.

▲⅜" Gypsum lath is a satisfactory base for cementing Temlok De Luxe and may be used in place of furring strips.

ARMSTRONG'S TEMLOK
FOR ROOF INSULATION

The following specifications are intended to include only the labor and material required for insulation and do not include roofing, roof boards, steel decks, or concrete work. The specifications for the work of other trades occurring in conjunction with the insulation should be worded to provide for the following:

1. **Roofing**—Built-up Roofing—Built-up roofing is applied directly to the surface of insulation and the application of both should go forward at the same time. The first layer of roofing should be cemented to the insulation with asphalt or pitch. No insulated areas should be left exposed overnight. When the insulation cannot be covered by the roofing contractor the same day as laid, the roofing specifications should provide that the roofing contractor shall cover the insulation temporarily to protect it from the elements.

2. **Concrete Work**—Roof Slabs—Insulation on Top—The roof slabs should be left reasonably smooth and even for proper installation of insulation.

3. **Carpenter Work**—The specifications should explicitly require the carpenter contractor to make sure that all roof boards are securely nailed in place. The roof deck should be reasonably smooth and even, without high joints between boards.

4. **Steel**—The outside surfaces of the steel roof deck sheets are painted with asphalt paint at the factory. After the sheets are erected, any bare spots should be recoated with asphaltic paint by the erecting contractor.

GENERAL

Before the application on the top of roof construction, the roof must be free from all moisture, loose material, and dirt. The contractor who builds the roof deck shall remove all rubbish, etc., from the roof and sweep the surface clean.

Armstrong's Temlok Insulation shall be cut to fit in a workmanlike manner around the penthouse, parapet, fire walls, vent pipes, ventilators, skylights, etc. All outer exposed edges of insulation, as at open eaves or open gable ends or any edge which comes in contact with vertical parapet wall, should be sealed with a strip of felt laid in asphalt or pitch. All cant strips used shall be installed over the insulation.

Insulation should be isolated in areas not greater than thirty feet square in each direction over entire roof at all outside edges, and three feet back from all parapet walls or borders by a seal course of felt bonded to top of insulation and roof deck with asphalt or pitch.

1. **Specifications for Armstrong's Temlok on Concrete, Concrete Tile, and Steel Roof Decks**—The concrete deck shall first be given a uniform mopping of asphalt or pitch, into which, while hot ( ), thickness of (") Armstrong's Temlok shall be embedded. If asphalt is used in connection with the installation, an asphalt primer shall be used to insure proper bonding to the roof slab. Not less than thirty-five pounds of asphalt or pitch shall be used per square per mopping. Where the slope of a roof deck is in excess of 3" to the foot, provision must be made for nailing of insulation by setting wood nailing strips, preferably creosoted, into deck on not over 3' centers and running parallel to slope. Each board shall be placed close to the adjoining board and the edges of the boards shall be sealed with the asphalt or pitch when set in place. Where the work is stopped at the end of the day, all edges shall be protected and properly sealed off so that no water can get under the seal. This seal shall be drawn down tightly over the edges of the insulation so that it will not be necessary to break it when work is resumed.

On roof decks where condensation is a problem or where insulation is laid over a freshly poured concrete or wet deck, it is essential that a seal be applied consisting of Armstrong's Asphalt Sheeting or not less than 14- or 15-pound saturated felt, lapped 2 inches, and laid between two solid coats of hot asphalt or coal-tar pitch, this seal course to be carried up on all walls, curbs, and other projections 3 inches above the top of the insulation.

2. **Specifications for Temlok on Wood Decks**—Where there will be danger of the roofing compound's dripping through the deck it shall be covered first with a sheet of rosin-sized paper before installing Armstrong's Temlok.

On the wood deck ( ) thicknesses of (") Armstrong's Temlok shall be nailed in place. The insulating boards shall be placed close together and secured to flat or sloped roof decks by nailing with (") galvanized nails with shank ¾" longer than thickness of board insulation used approximately 12" on centers both through the center and around the edge of each board.

On roof decks where condensation is a problem, it is essential that a seal be applied consisting of not less than 14- or 15-pound saturated felt, lapped 2 inches, and laid between two solid coats of hot asphalt or coal-tar pitch, this seal course to be carried up on all walls, curbs, and other projections 3 inches above the top of the insulation.

Temlok Roof Insulation is sold through roofing contractors.

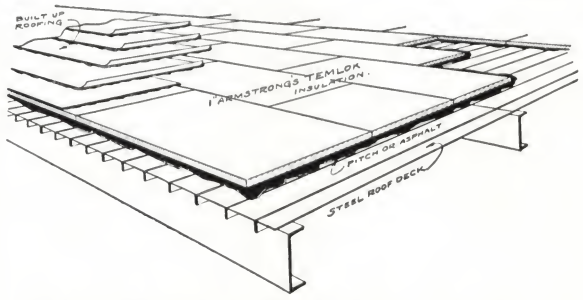


Fig. 1. Method of installing Temlok on steel or concrete roof deck.

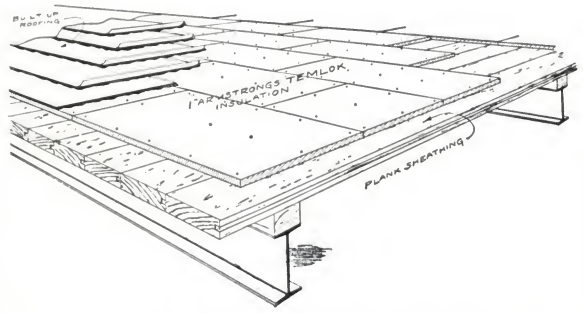


Fig. 2. Method of installing Temlok on plank sheathing.

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ROCHESTER
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SEATTLE
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DISTRIBUTORS

Appleton, Wis. ..... Northwestern Asbestos and Cork Insulation Co.
Baltimore, Md. ..... John R. Livezey
Boston, Mass. ..... T. R. Nunan Co.
Charleston, W. Va. ..... Capital City Supply Co.
Cleveland, Ohio ..... Clark Asbestos Co.
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Providence, R. I. ..... Rhode Island Covering Co.
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Springfield, Mass. ..... Johnson Asbestos Co.
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Tacoma, Wash. ..... Asbestos Supply Co.
Terre Haute, Ind. ..... The Hartmann Co.
Tulsa, Okla. ..... Kelley Asbestos Products Co.
Washington, D. C. ..... John R. Livezey
Wichita, Kans. ..... Ludeman Insulations Co.

ARMSTRONG CORK COMPANY

BUILDING MATERIALS DIVISION - - LANCASTER, PA.

SECTION 10

CONTINUED ⟶

CORK IMPORT CORPORATION

Novoid Cork Insulation

McGraw-Hill Building, 330 West 42nd Street

NEW YORK, N. Y.

DISTRIBUTORS IN PRINCIPAL CITIES

Products

NOVOID STANDARD CORKBOARD—for all cold storage rooms, and walls and roofs of all kinds of buildings.

NOVOID FEATHERWEIGHT CORKBOARD—This is a special light density corkboard recommended for the insulation of household refrigerators, cold storage store display cabinets, motor truck bodies, refrigerated or air conditioned railroad car bodies, and generally where it will be enclosed in and supported by the construction.

NOVOID SHEET CORKBOARD — In thicknesses ranging from ¼ to ⅞ in. where special requirements need this dimension.

NOVOID AIRTITE CORKBOARD — A light density corkboard with a thin asphalt mastic finish, ironed on both surfaces. Impervious to air in filtration. For *"hard service"* use, in ice storages, dairy rooms, fur storages and sharp freezers of all kinds.

NOVOID MASTIC FINISH CORKBOARD—Coated on one surface only, with approximately ⅛ in. thickness of hot fluid mastic ironed on under pressure. Has many special uses.

NOVOID CORKDUC INSULATION —Developed to meet the insulation requirements of the small commercial air conditioning installation. ½ in. thickness with ironed-on mastic finish on one side only.

DIMENSIONS AND THICKNESSES—Novoid Standard. Featherweight and Airtite Corkboard are furnished in 12x26, 18x36, 24x36 and 36x36 in. sizes, 1, 1½, 2, 3, 4 and 6 in. thick.

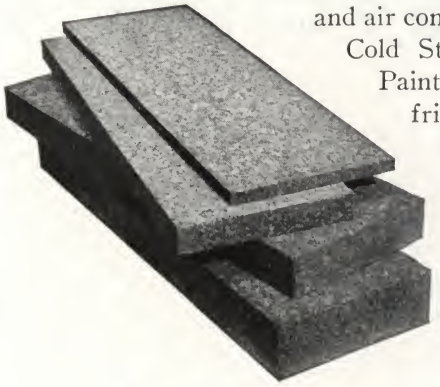
Novoid Sheet Corkboard, Corkduc and ⅛ in. Mastic Finish Corkboard are furnished in 12x 36 in. sizes *only*.

The right is reserved to ship not over 10% in lengths shorter than 36 in. on all orders of any type of Novoid Corkboards.

NOVOID CORK MACHINERY ISOLATION—for reducing the noise and vibration of moving machinery.

STONEWALL EMULSIONS and PLASTIC FINISH—Airproof and waterproof finishing surface for Novoid Corkboard.

NOVOID CORK PIPE COVERING—for all low temperature pipe lines, tanks, refrigerated drinking water, and air conditioning systems. Also Novoid White Cold Storage Paint and Novoid Aluminum Paint—for interiors of all rooms under refrigeration where Stonewall Plastic finishes are specified for surfacing.



Novoid Corkboard

Novoid Cork Pipe Covering for Air Conditioning

Installation, Prices and Information

Good cork insulation must be properly installed to give the maximum insulation efficiency. Our distributors in your territory are insulation engineers and contractors, qualified by long experience in the proper methods of erecting Novoid Cork Insulation. Their mechanics in the field are experienced in their trade and their skill means sound, permanent insulation structures.

These distributors will gladly co-operate with you in solving your particular insulation problem, by the application of Novoid Cork Insulation.

Prices, samples and information will be given without obligation.

Stonewall Plastic Finishes

Novoid Cork Pipe Covering for Cold Lines

Novoid Corkboard

For the Cold Storage Industry—Novoid Corkboard insulation, manufactured in the United States, is invaluable to the cold storage industry. Rooms, vaults, cabinets, refrigerators and quick freezing rooms must be adequately insulated to keep even temperature for the manufacture of dairy products and other food stuffs and the preservation of these edibles as well as meat, fish, poultry, eggs, vegetables and fruits.

For Air Conditioning Systems—Novoid Corkboard is light in weight yet structurally strong. When you specify this long life insulation for metal ducts carrying cool air, you have a heat resisting insulation on the distributing ducts that keeps heat out and cold in.

Air washing rooms properly insulated with Novoid Corkboard will prevent costly infiltration of warm air that otherwise soon dissipates the correct temperature that should be maintained.

Stonewall Plastic Finish

Stonewall Plastic Finish is a uniform easy working asphaltic plaster, thoroughly machine-mixed at the factory. It is applied cold as received, just like surface cement. It forms a smooth, one-piece, airtight and watertight finish that keeps corkboard dry and sound. It fills every crack and crevice and equalizes any unevenness.

Stonewall Plastic Finish, properly applied, is waterproof, and will not crack, chip, bulge, run, or become brittle. It is odorless and non-inflammable.

Stonewall Plastic Finish can be washed with hot or cold water, or steam, without injury. It will not absorb odors. Therefore it makes cold storage rooms absolutely sanitary.

If cut or cracked by accident Stonewall Plastic Finish can be skim coated or patched and such injuries completely healed. The new work bonds perfectly with the old.

Stonewall Emulsion

This is the base material of Stonewall Plastic Finish and may be obtained when the factory machine-mixed finish is not desired or when a mineral filler is to be added, in order to give a rough sand appearance to the surface, somewhat similar to stippled walls.

Should a smooth finish be desired, the second coat of Stonewall Emulsion is applied as received. By dipping the trowel in water, the finish may be glazed on the surface. No further troweling is necessary.

Stonewall Plastic Emulsion

Stonewall Plastic Emulsion is a mixture of the proper proportions of Stonewall Emulsion, asbestos floats, and fine screened sand, mixed at the factory and shipped to the job ready for application.

Novoid Cork Pipe Covering

This companion product to Novoid Corkboard is made in three thicknesses: *Heavy Brine,* for temperatures below 0° F.; *Brine,* for temperatures from 0° F. to 25° F.; *Ice Water,* for temperatures above 25° F.

Novoid Cork Pipe Covering is used for covering all low temperature pipe lines, wherever located, and for insulating the ice water lines of refrigerated drinking water systems in hotels, office buildings, and factories. Correctly applied, the accurately moulded, asphalt mastic coated sections fit pipes tightly leaving no spaces in which moisture might accumulate, freeze and disrupt the insulation.

Save time and labor with Novoid Cork Pipe Covering when insulating air conditioning pipe lines. Sectional covering for pipe; also covers for welding ells, standard or long radius, 90° or 45° are delivered ready to fit standard pipe sizes. The illustration, on preceding page, shows 8-in. pipe size cork pipe covering ready to apply.

For covering all fittings Novoid Cork Fitting Jackets are used. These cork jackets are made to fit closely so that, when properly erected, no air spaces will exist between the fittings and the insulation.

For covering tanks we recommend the use of Novoid Cork Lagging.

Novoid Cork Machinery Isolation

Novoid Cork Machinery Isolation provides an economical and effective means of reducing the noise and vibration produced by fans, motors, pumps, engines, presses, and practically all other kinds of moving machinery.

Made by baking under pressure a selected grade of granulated cork, its density is controlled. Properly applied, it will not absorb moisture and does not rot. Furthermore it will not harden or take a permanent set, but retains its resiliency indefinitely.

Novoid Cork Machinery Isolation is made in two densities — Standard and Heavy — which provide a proper material for use under practically all conditions of service. 12 ins. wide, 36 ins. long, thickness 1, 1½, 2, 3, 4, 5 and 6 ins.

Literature and Samples

Bulletin 289—Stonewall Plastic Finish.

Bulletin 292—Novoid Cork Covering.

Bulletin 293—Novoid Corkboard Insulation.

Bulletin 294—Novoid Cork Machinery Isolation.

Samples of each product furnished without obligation.

MEMORANDA

CORINCO

INSULATION PRODUCTS

CORK INSULATION COMPANY, INC.

Corinco Cork Products MANUFACTUREI

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General Specifications for Insulating Ceilings and Floors
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Corinco Corkboard for Insulating Roofs
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General Specifications for Insulating Freezing Tanks
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Chart of Heat Loss Coefficients
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Insulation of Brine Coolers and Cylindrical Tanks
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Corinco Marine Insulation
Page 21

Corinco Machinery Isolation Corkboard
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A NATIONAL ORGANIZATION

To assure prompt and adequate service the Cork Insulation Co., Inc., has established branch offices at strategic points throughout the United States. In addition, independent distributors are located in many principal cities. Each of our branch offices and most of our distributors maintain ample warehouse stocks to facilitate deliveries.

IMPORTING FACILITIES

Our buyers travel throughout the cork centers of the world selecting and purchasing only the finest quality materials. After the purchases are completed and the materials are ready for shipment, these buyers supervise its weighing and loading into America-bound ocean freighters, which convey the rough cork directly to our factory at Wilmington, Delaware.

MODERN MANUFACTURING PLANT

Completed in the fall of 1930, our factory is one of the newest, most modern and efficient plants in which oven-baked corkboard is made. It was designed and equipped to produce an "unusually fine" group of products. Constant improvements in machinery and equipment have been made to assure dependable products of the highest quality.

GUARANTEE

Behind each and every Corinco product is an organization of tremendous financial strength, the management of which is in the hands of competent. aggressive men of wide experienec in the cork business. They recommend and guarantee Corinco products because they know that these products are the combined result of high grade materials and fine workmanship.

ENGINEERING AND ERECTION SERVICE

CORINCO CONSULTING ENGINEERS

We take great pride in the fact that our engineering staff is made up of men who have had long experience in solving the technical and practical problems of refrigeration insulation. Each of our branch offices is managed by a competent insulation engineer who is ready at all times to assist architects, owners, and builders in the solution of insulation problems.

WIDE EXPERIENCE IN ALL TYPES OF SPECIAL INSULATION SERVICES

The experience gained in successfully solving the diversified and complex problems of low temperature insulation is our guarantee that the insulation recommended will meet the requirements.

PREFERENCES

Because each installation is supervised and inspected by an experienced insulation engineer many users of insulation have changed to Corinco products. They know that they will be assured of best results. Our branch offices and distributors will gladly point out the superiority of Corinco products. Please feel free to consult with the branch office nearest you.

CORINCO INSTALLATION SERVICE

Because low temperature insulation work is exacting in nature, we have found that the safest and most economical plan of operation is for us to maintain crews of trained construction men at each of our branch offices. These crews, directed by competent superintendents, do better work in shorter time, and, consequently, at a minimum cost.

Installing Corinco Corkboard

CORK INSULATION COMPANY, INC.

155 EAST 44th STREET • NEW YORK, N. Y.

Branch Offices

BOSTON, MASS.
332 "A" Street

CHICAGO, ILL.
Corinco Insulation Co., Inc.
320 North La Salle Street

LOS ANGELES, CAL.
4804 De Kalb Street

PHILADELPHIA, PA.
17th & Sansom Streets

ST. LOUIS, MO.
2711 Olive Street

SAN FRANCISCO, CAL.
462 Bryant Street

WASHINGTON, D. C.
1425 "H" Street, N. W.

SEATTLE, WASH.
2410 First Avenue, South

Factory: Foot of Christiana Avenue, WILMINGTON, DELAWARE

Story of Cork AND IT'S UNUSUAL

Stripping Bark from Tree

Unloading Raw Cork at Factory

CORK - THE BARK OF THE CORK OAK TREE

Strange as it may seem, cork as it is known in present day life, is in reality part of the outer bark of a tree.

SOURCES OF SUPPLY

The commercial cork oak tree, an evergreen species and different in this respect from our native northern oak, grows only around the rim of the Mediterranean territory. Large commercial forests are located in and along the coasts of Spain and Portugal, and smaller forests are found in Northern Africa.

STRIPPING THE BARK

At periodic intervals under governmental inspection and regulation, the outer bark is stripped away from the trunk and lower limbs as shown in the accompanying photograph.

After the trees have been stripped the bark is loosely piled and allowed to dry for several days. The bark is then bound into crude bundles and carried down from the hills to the nearest railroad station or warehouse.

PREPARATION FOR MARKET

When the cork bark is received at the warehouse it is boiled, scraped, trimmed, graded and baled preliminary to its being offered for sale and for shipment to the various cork processing plants located throughout the world.

TRANSPORTATION

Cork purchased for American interests is loaded into general cargo or tramp vessels and imported into this country where it is converted into the many products used in our domestic, commercial, and industrial activities.

STRUCTURAL CHARACTERISTICS

CORK—A NATURAL INSULATOR

The natural insulating properties of cork have long been known, particularly to the Spanish and Portuguese farmers who observed that the cork oak tree was able to withstand the hot blistering winds of their locality while other trees and plants, not so hardy, were scorched and killed.

Further investigation showed these farmers that this cork oak bark, when used in the construction of their homes, helped to exclude the summer heat and the winter cold.

This crude form of insulation was the forerunner of our present day commercial insulating methods.

"Virgin" Cork "Refugo" Cork

The first stripping of the tree produces cork of a rough, greyish uneven surface and is known as "virgin" cork. This is suitable only for grinding to produce cork insulation and cork composition products. The second stripping is considerably better than the first, but it is not until the third stripping that a tree begins to produce its finest quality of cork, of which about 60% is suitable for the manufacture of all natural products, such as bottle stoppers, floats, cork balls, etc.

The other 40% of the cork produced by the second and subsequent strippings is known as "refugo" which, while not suitable for products such as previously mentioned, is entirely satisfactory for grinding.

UNIQUE CELLULAR CONSTRUCTION

The thick outer bark of the cork oak tree is made up of millions of tiny cells in marked contrast to the bundles of long fibres running lengthwise in the bark of most other trees. These tiny cells, which imprison small quantities of air, average approximately 1/1000 of an inch in diameter and are separated from each other by a microscopic strand of resinous gum.

Modern scientific investigation has proven that, next to a complete vacuum, a minutely divided air space is one of the most effective barriers against the passage of heat and cold.

Cork then, by its peculiar cellular structure, is a natural insulator against the passage of heat and cold.

Virtually all of the physical properties of cork are based either directly or indirectly upon this unique cellular construction. The most important physical properties of cork are (1) buoyancy —light weight; (2) compressibility; (3) resilience; (4) resistance to moisture and liquid penetration; (5) frictional quality; (6) low thermal conductivity; (7) ability to absorb sound and vibration; (8) stability; and (9) chemical inertness.

These properties of cork account for its manifold uses and also for the existence of the far-flung cork industry. Those characteristics of particular interest to the building industry are discussed in some detail in the following pages.

Typical Bale of Cork Bark

Corinco Corkboard » » » »

TYPE OF CORK USED IN CORKBOARD

Today we insulate our homes and our industrial buildings in a slightly different manner from that used by the Spanish and Portuguese farmers. We use the outer bark of the cork oak tree in another form—corkboard.

MAKING OF CORKBOARD

In the manufacture of corkboard the raw cork bark is ground into granules varying in size from 3/8 to 3/4 of an inch. These granules after being cleaned and screened are poured into steel molds, carefully packed and compressed to form a mat through which air cannot filter. These loaded molds are then placed in large ovens and baked.

NO ARTIFICIAL BINDER USED

The natural chemical properties of raw cork eliminate the necessity of any artificial binder. During the baking process the natural resinous gums surrounding the air cells are released sufficiently to bind the compressed granules into a self-supporting cork block.

SIZES OF CORINCO CORKBOARD

After these blocks of cork have cooled they are taken from the molds and passed through trimming and splitting machines, emerging as finished corkboard in various sizes and thicknesses. These standard sizes are 12 x 36 inches and 24 x 36 inches and from 1, 1½, 2, 3 and 4 inches in thickness.

USES OF CORKBOARD

Corkboard is used for the insulation of individual rooms or entire buildings in the cold storage industry, ice cream hardening rooms, cold storage locker plants, fur storage vaults, fruit ripening rooms, refrigerator cars and truck bodies, and for the insulation of roofs in the textile and many other industries where condensation is likely to be found.

It is widely used for the insulation of ducts, air washers, etc., in air conditioning restaurants, department stores and commercial buildings. In theatres and radio broadcasting studios corkboard is unsurpassed for acoustical correction. The sound deadening properties of cork make it invaluable for the isolation of machinery vibration in industrial plants and other types of buildings and it is also used extensively for the abatement of noise in hospitals, libraries and schools.

In the marine field, cork insulation is used for the protection and preservation of perishable cargo and it has contributed much to the safety and comfortof the passengers and crews of ocean liners and other naval vessels.

Raw Cork Storage

Corinco Cork Board (Actual Size)

ADVANTAGES OF CORK INSULATION BOARD

1. Low Thermal Conductivity

Because of its low thermal conductivity, corkboard is generally recognized as the standard material in the low temperature insulating field. In fact, it is common parlance in the refrigerating and low temperature trades to speak of insulation materials in terms of "cork equivalent".

Two well known independent testing laboratories have recently completed a series of tests on corkboard and various substitute materials to determine the relative efficiency and performance of each type of material. Both laboratories found that corkboard had a lower thermal conductivity than any of the other materials. The results of these tests are shown below:

RESULTS OF THERMAL CONDUCTIVITY TESTS— DRY MATERIALS

Insulation	Thermal Conductivity (k) 60° F Mean Temperature		Relative Insulating Value Corkboard = 100	
	LAB I	LAB II	LAB I	LAB II
Corkboard*	0.277	0.270	100.	100.
Shredded Redwood Bark	0.294	0.279	94.6	96.8
Animal Hair Board	0.315	0.288	88.3	93.8
Wood Fibre Board	0.322	0.302	86.3	89.4
Mineral Wool Board	0.324	0.318	85.8	84.9
Vegetable Fibre Board	0.356	0.336	78.1	80.4

* Corkboard values are averages of values for boards of five different manufacturers.

2. High Resistance to Moisture and Capillarity

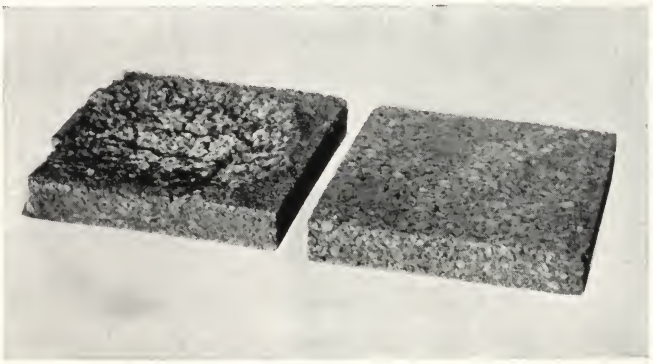
Low temperature insulation, to be satisfactory, must retain its operating efficiency over long periods and must be able to resist the deteriorating effects of moisture. Cork, being cellular rather than fibrous in nature, has a natural buoyancy and resistance to water.

This inherent resistance to water is further fortified by our baking process. This process has two very important effects. First, it drives out any remaining sap or moisture in the air cells, thus increasing the amount of dry imprisoned air in the cork. Second, it heats up and melts the natural resinous gums surrounding the cells. This melted gum flows through the entire mass of granules and binds them together into a single air-tight and water-proof board.

RESULTS OF MOISTURE ABSORPTION TESTS

Insulation	Full Size Specimens		Cut Specimens	
	% Absorption by volume	Relative Absorption Corkboard =100	% Absorption by volume	Relative Absorption Corkboard =100
Corkboard*	10.9	100.0	14.6	100.0
Mineral Wool Board	15.1	138.5	30.8	211.0
Vegetable Fibre Board	0.7	6.4	24.5	167.8
Wood Fibre Board	59.0	541.3	83.4	571.2
Shredded Redwood Bark	23.0	211.0	not tested	not tested
Animal Hair Board	11.7	107.3	13.2	90.4

* Corkboard values are averages of values for boards of five different manufacturers.



Before and After Fire Test

3. Fire Retardant

The two laboratories previously referred to also conducted fire tests on the various materials in accordance with the methods prescribed by the United States Bureau of Standards. In no instance did the flame break through the corkboard being tested. All substitute materials, however, were either completely consumed or the binder burned out leaving an ash residue or a mass of inorganic material.

As soon as the flame was removed the corkboard ceased to burn and all smoldering stopped within one minute. The substitute materials continued to flame or smolder until completely consumed. All substitute materials were classed as "combustible" while corkboard was described as "fire retardant".

4. Structural Strength

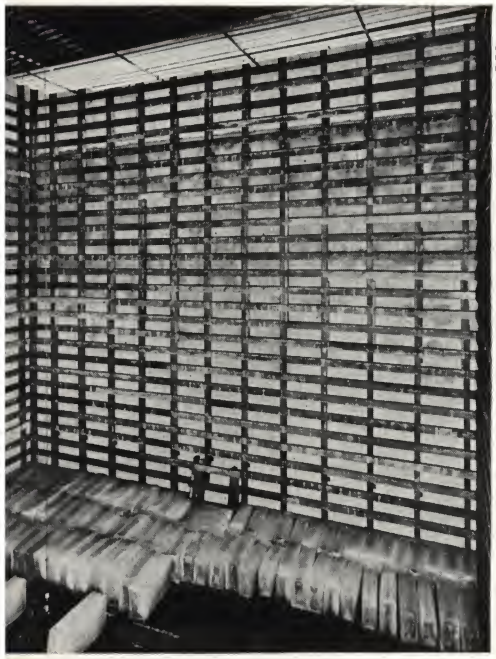
Two of the outstanding advantages of corkboard over other insulating materials are (1) its structural strength and (2) the ease with which it can be erected. It can be cut or sawed, and nailed into place like lumber in frame construction, or set in Portland cement mortar or other plastic material against stone, concrete, brick, or hollow tile, on either walls or ceilings.

No permanent external supports or retaining walls are necessary even in the construction of solid self-supporting cork partitions. Corkboard forms a tight and enduring bond with either Portland cement plaster or asphalt and can be satisfactorily finished in the usual manner.

5. Sanitary, Rot and Vermin Proof

Sanitation measures demand that an insulating material shall not harbor vermin or germs, that it shall be free from offensive odors, and that it shall not disintegrate. Corkboard has no natural odor and it cannot harbor vermin. Since no glue, pitch, or other artificial binder is used in its manufacture, corkboard can be applied with certainty that it will not disintegrate but will remain intact.

GENERAL RECOMMENDATIONS



Cork Insulation Reinforced with wood Stays on high walls of ice Storage Room

WALLS

Air tends to move through the walls of a cold storage space toward the low temperature side. When this occurs, the moisture in the air will be deposited if the dew point is reached. Should this condensation of moisture take place in the body of the insulation, its efficiency would be seriously impaired.

Theoretically the outer wall surface of the building is the ideal place to waterproof and vaporproof against infiltration. Unfortunately this is impossible in most cases and the only alternative is to treat the inside of the wall before erecting the insulation.

Although both cement mortar and hot asphalt are specified for erecting wall cork, asphalt is recommended as it provides protection against air infiltration.

On very high walls, it is advisable to provide additional supports for the cork by installing intermediate horizontal or vertical wood stays bolted to the walls.

CEILINGS

The preferred method of insulating ceilings is to place the insulation on top of the floor above, connecting it with the wall insulation through slots around the floor. Where slots cannot be provided ribbands of cork should be installed on the ceiling below, adjacent to the wall, to eliminate heat loss through the ceiling structure at this point.

On new concrete structures where insulation must be placed on the underside of the ceiling slab, the cork should be placed in the forms before concreting rather than to apply to the insulation to the underside of the finished slab.

If this method is not feasible it is necessary to use one of the less desirable forms of installation, such as erection with cement mortar or hot asphalt. Where the cork is erected with cement mortar it is important to securely prop the cork—this method is not recommended for ceilings of any considerable size. Where hot asphalt is used, wood nailing strips should first be bolted to the concrete, and the cork securely nailed thereto.

Placing Cork in Concrete Forms for Insulating Ceiling Below

ROOFS

Roof insulation is generally placed immediately on top of the structural roof and the membrane applied directly to the cork surface. This is the ideal method of preventing infiltration of air. Since the roof exposure is usually greater than that of any other exterior surface of the building, it is advisable to provide more insulation at that point.

Applying Three Layers of Cork Insulation on the Upper Side of Roof Slab

FOR INSTALLING CORKBOARD

THICKNESSES OF INSULATION REQUIRED

One of the most important elements of a refrigerating system is proper insulation. In this respect corkboard has been accepted in general as a standard. Insulation is therefore referred to in terms of its equivalent.

To determine the proper thickness of corkboard required several factors must be considered, such as:

Cost of Producing Refrigeration
Climatic Conditions
Type of Building
Temperature to be maintained
Nature of Materials to be Stored

The total heat leakage through the walls, floors, ceilings, and roofs is a governing factor in establishing costs of refrigeration.

The maximum permissable rate of this heat transfer must be ascertained by considering the aforementioned factors. The heat transmission chart on page 17 may be used as an aid in determining the heat transmission through various types of construction.

The various surfaces may be calculated with Corinco Corkboard of different thicknesses until the proper thickness has been reached to reduce the overall transmission to the established maximum.

Under average conditions, the thicknesses of Corinco Corkboard required to economically maintain various temperatures are as follows:

RECOMMENDED THICKNESS OF INSULATION

Room Temperature	*Recommended Corkboard Thickness*
45° and above	2″
35° to 45°	3″
20° to 35°	4″
5° to 20°	5″
—5° to +5°	6″
—20° to —5°	8″

RECOMMENDED STORAGE TEMPERATURES IN DEGREES F
According to Various Authorities

Apples	31–33	Cucumbers	36–38	Ice Cream	15	Oysters (shells)	33–43
Asparagus	32–35	Dates	45–55	Lard	33–40	Parsnips	32–35
Beans (dried)	32–45	Eggs	30–35	Lemons	35–55	Peaches	31–45
Beef (fresh)	33–37	Fish (fresh)	20–30	Lambs	32	Pears	30–36
Beef (dried)	36–40	Fish (fresh-water frozen)	17–20	Livers	20–30	Pork	20–34
Beer (barrels)	32–38	Fish (canned)	33–36	Maple Syrup and Sugar	40–45	Potatoes	34–50
Beer (bottles)	45	Fish (dried)	25–40	Meats (canned)	30–40	Poultry (frozen)	10–30
Berries (fresh, 10 days)	35–40	Flowers (cut)	36	Meats (brined)	35–43	Poultry (to freeze)	0–22
Butter	10–32	Fruits (canned)	30–40	Meats (fresh)	33–35	Poultry (long carry)	10–30
Butter (to freeze)	20–22	Fruits (dried)	35–40	Melons	35–36	Raisins	55
Cabbage	31–35	Furs (undressed)	35	Milk	32–38	Salt Meat Curing Room	32
Cantaloupes	40	Furs (dressed)	25–35	Mutton (fresh)	32–35	Sardines (canned)	35–40
Carrots	32–35	Game (frozen)	10–28	Mutton (frozen)	25–28	Sauerkraut	35–38
Celery	31–35	Game (to freeze)	0–20	Nuts (in shells)	30–40	Sausage Casings	20–30
Cheese	28–35	Game (long carry)	10–28	Nursery Stock	30	Scallops (frozen)	16
Chestnuts	33–40	Grapes	30–36	Oatmeal	38–42	Syrup	35–45
Chocolate (dipping room)	65	Ginger Ale	35–36	Oleomargarine	20–35	Tobacco	35–42
Chocolate (to cool)	40	Hams (not brined)	20–35	Onions	32–36	Veal	32–34
Cider	30–35	Hogs	30–33	Oranges	32–45	Watermelons	34–40
Cigars	35–42	Honey	36–45	Oxtails	30–32	Wines	40–50
Cranberries	32–40	Hops	32–35	Oysters (tubs)	25–35	Woolens	25–28
Cream	33–35	Ice	28				

ACCESSORIES USED IN CONSTRUCTION

To obtain satisfactory results, aside from the proper thickness of insulation, it is imperative that suitable construction materials be used. Each of the following Corinco products is designed for its particular function and will provide maximum satisfaction in every respect.

Asphalt

For the erection of corkboard in asphalt it is of great importance to use the proper grade. Corinco Asphalt is odorless and possesses all of the necessary qualifications with reference to proper ductibility, melting point, and penetration. Corinco Asphalt Primer is cut back with petroleum spirits from the same grade of asphalt.

Emulsified Asphalt

Corinco Emulsified Asphalt differs decidedly from the ordinary types of asphalt, paints and asphalt cement in that it is odorless, tasteless, non-inflammable and mixes readily (cold) with such aggregates as Portland cement, gravel and sand.

It is odorless, tasteless and fire resistant, and offers positive protection against fumes, acids, alkalies and brine drip. It remains elastic and ductile under extremely cold temperatures and will withstand comparatively high temperatures without sagging or flowing. It is ideal for use as a finish where moisture conditions are severe within a refrigerated space. It is particularly adapted as a finish on the underside of ceiling insulation.

Aluminum Paint

All aluminum paints are not suitable for application over emulsified asphalt finishes. Corinco Aluminum Paint has no solvent effect on the emulsified asphalt, will not discolor, and is absolutely odorless.

Skewers and Nails

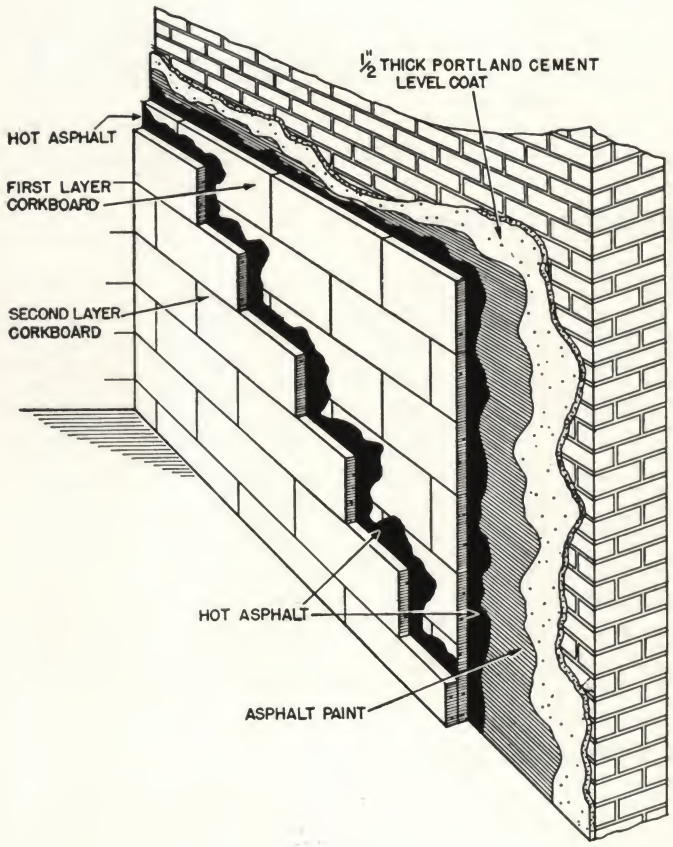
Because wood is a better non-conductor of heat, wooden skewers of the proper thickness and size are preferred to nails for securing one layer of corkboard to another. Experience has also proved that, in cork, wooden skewers have greater holding power than nails. However, where the corkboard is to be fastened directly to wood framing or sheathing, special galvanized wire nails are recommended. These nails are made of small gauge metal, have large heads, and will not rust.

GENERAL SPECIFICATIONS FOR WALLS
FOR MASONRY AND WOOD

NOTES CONCERNING SPECIFICATIONS

The specifications on this page and on pages 11, 12, 13 and 14 are given to cover typical conditions which are commonly encountered. For special conditions, details of the most satisfactory type of installation and specifications will be gladly supplied by our insulation engineers who are available at the main office and at the various branch offices listed on page 3.

The following specifications are based on two-layer construction. For single layer construction, apply as described for the first layer only.



Specification No. 1

WALLS—MASONRY

(Two layers of Corkboard, both layers applied in hot asphalt.)

The surfaces of all masonry walls against which Corkboard is to be applied must be thoroughly cleaned of all dirt, dust, loose mortar, etc. Where necessary to permit 100% contact of Corkboard they shall be made true and level with Portland cement plaster, mixed in proportions of approximately one part Portland cement and three parts of clean, sharp sand. A small amount of hydrated lime may be added, not exceeding 5%. Wall surfaces against which this leveling coat is to be applied should first be roughened to insure a proper bond. The plaster shall be applied in one or more coats, and be of a thickness to cover all high points. It shall be straightened with a straightedge and floated to a smooth finish.

After the plaster has thoroughly dried, one good coat of Corinco Asphalt Priming Paint shall be applied. When the paint has dried sufficiently, the first layer of Corinco Corkboard shall then be applied in hot asphalt.

A second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first with wooden skewers.

All joints must be butted tight, proper care being exercised to keep all edges and ends clean. Vertical joints in the first layer must be broken, and all joints in the second layer broken with respect to those in the first.

The exposed surfaces of Corkboard shall be finished as described under "Finishes" on page 13.

Specification No. 2

WALLS—MASONRY

(Two layers of Corkboard, first layer applied in cement mortar—second layer applied in hot asphalt.)

The surface of all walls against which Corkboard is to be applied shall first be thoroughly cleaned of all dirt, dust, loose mortar, etc., and, if necessary, roughened to insure a proper bond. Just before the Corkboard is applied the surface shall be sprinkled with water. The first layer of Corinco Corkboard shall then be applied in a bed of Portland cement mortar, approximately ½" thick, mixed one part Portland cement and two parts clean, sharp sand.

A second layer of Corinco Corkboard shall be applied against the first in hot asphalt, additionally secured with wooden skewers.

All joints must be butted tight, proper care being exercised to keep all edges and ends clean. Vertical joints in the first layer must be broken, and all joints in the second layer broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as described under "Finishes" on page 13.

Specification No. 3

WALLS—WOOD SHEATHED

(Two layers of Corkboard, first layer nailed—second layer applied in hot asphalt.)

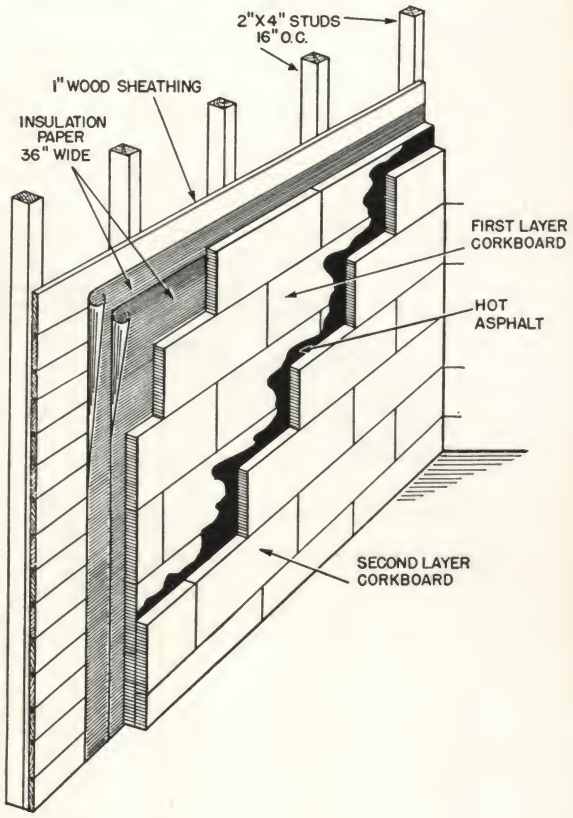
Directly against the wood sheathing two layers of waterproof insulating paper shall be applied, with edges well lapped.

The first layer of Corinco Corkboard shall be applied against the paper, and secured to the wood sheathing with special flat head galvanized wire nails of proper length.

The second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first layer with wooden skewers.

All joints must be butted tight, proper care being exercised to keep all edges and ends clean. Vertical joints in the first layer must be broken, and all joints in the second layer broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as described under "Finishes" on page 13.

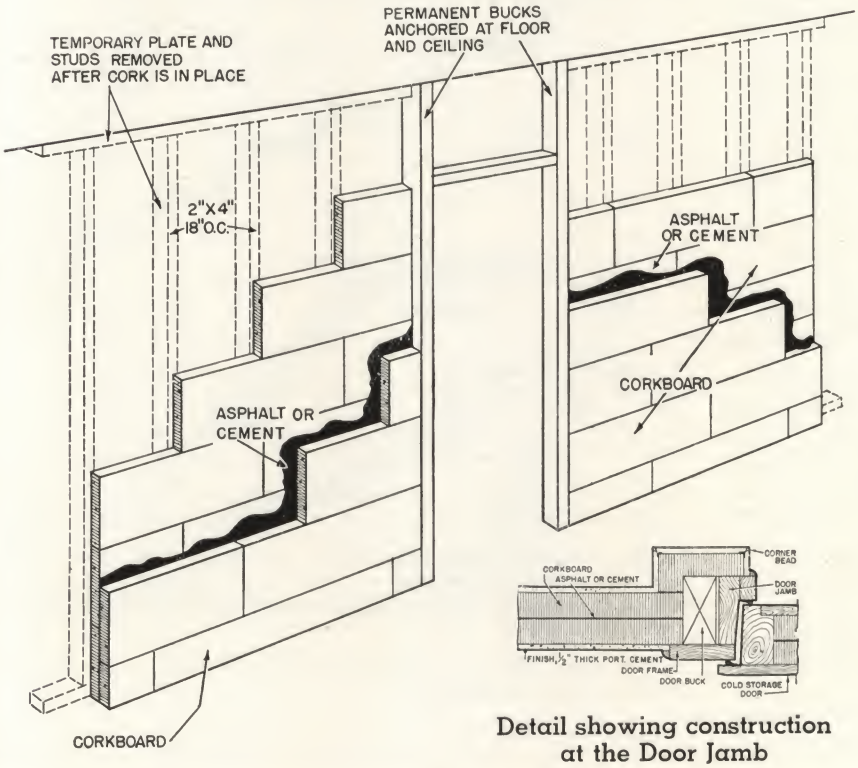


Specification No. 4

PARTITIONS—CORK—SELF-SUSTAINING

(Two layers of Corkboard, asphalt or cement mortar between.)

Temporary 2 x 4 studs shall be erected 18″ on center on a line with one side of the partition. Care must be exercised to have the studding plumb and in perfect alignment. (Where doors are to be set in partitions, permanent wooden bucks shall be set with wooden lintel between. Door bucks shall be securely anchored to floor and ceiling to withstand any shock due to opening and closing of doors.)



Detail showing construction at the Door Jamb

The first layer of Corinco Corkboard shall be erected on edge against temporary studs. Each cork board shall be securely toe-nailed to the abutting one, and likewise to walls, floor and ceiling, wherever possible, with wooden skewers.

All joints must be butted tight, and vertical ones broken.

A. Second Layer in Asphalt: A second layer of Corinco Corkboard shall be applied in hot asphalt, and additionally secured to the first with wooden skewers.

B. Second Layer in Portland Cement Mortar: The surface of the first layer shall be rough scratched with Portland cement mortar approximately ¼″ thick, mixed one part Portland cement, and two parts clean, sharp sand. After this coat has set, a second layer of Corinco Corkboard shall be applied in Portland cement mortar approximately ½″ thick mixed in same proportions as for scratch coat, and additionally secured to the first with wooden skewers.

All joints in the second layer must be butted tight, proper care being exercised to keep all edges and ends clean and broken with respect to those in the first layer.

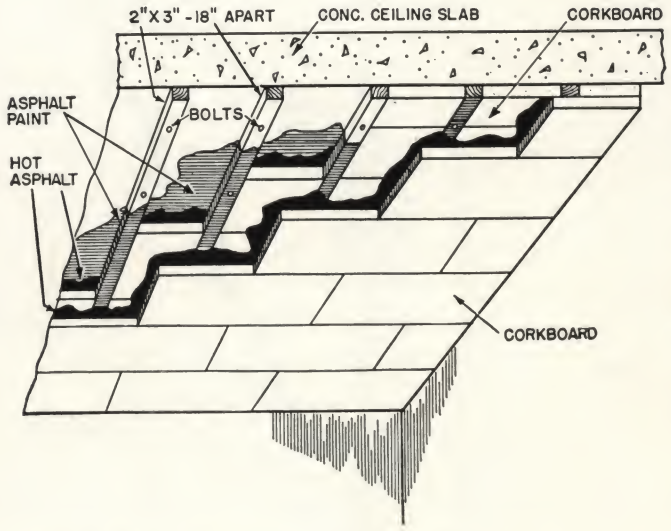
Each exposed side of Corkboard partition shall be finished as specified under "Finishes" on page 13.

Before removing temporary studs, finish the opposite side of partition.

Specification No. 5

CEILINGS—CONCRETE

(Two layers of Corkboard, both layers applied in hot asphalt.)



The concrete ceiling slab must first be thoroughly cleaned of all dirt, dust, loose mortar, etc. Wooden nailing strips 2¾" wide x (thickness of first layer of corkboard) shall be affixed to the underside of the concrete ceiling with suitable anchors. Nailing strips shall be spaced 18" apart.

Both concrete slab and nailing strips shall then be given one good coat of Corinco Asphalt Priming Paint. When paint has dried, the first layer of Corinco Corkboard shall be applied in hot asphalt against the concrete slab, tightly fitted between nailing strips and toe-nailed to same with special head galvanized wire nails.

A second layer of Corinco Corkboard shall be applied in hot asphalt, additionally secured to the first layer with wooden skewers and nailed to nailing strips with special head galvanized wire nails.

All joints must be butted tight; all edges and ends kept clean. Joints in the second layer must be broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as described under "Finishes" on page 13.

Specification No. 6

CEILINGS—CONCRETE

(Two layers of Corkboard, First layer applied in concrete forms; Second layer applied in hot asphalt.)

The concrete ceiling forms in which the first layer of corkboard is to be placed shall be lowered (thickness of corkboard) and the first layer of Corinco Corkboard shall be laid dry in same. After concrete reinforcing has been laid, special head galvanized wire nails, 1½" longer than the thickness of the corkboard, shall be driven obliquely into the cork boards using approximately eight nails to each board. The heads shall be left protruding approximately 1½". The concrete shall be poured directly upon the corkboard.

After the concrete has set and the forms have been removed, a second layer of Corinco Corkboard shall be applied in hot asphalt, additionally secured to the first layer with wooden skewers.

All joints must be butted tight, keeping edges and ends clean, and transverse joints in the first layer broken. Joints in the second layer must be broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as described under "Finishes" on page 13.

Specification No. 7

CEILINGS—CONCRETE

(Two layers of Corkboard, First layer applied in cement mortar—Second layer applied in hot asphalt.)

The concrete surface against which corkboard is to be applied must be roughened or hacked to insure a proper bond and then cleaned of all dirt, dust, loose mortar, etc. Sprinkle surface with water just before applying corkboard.

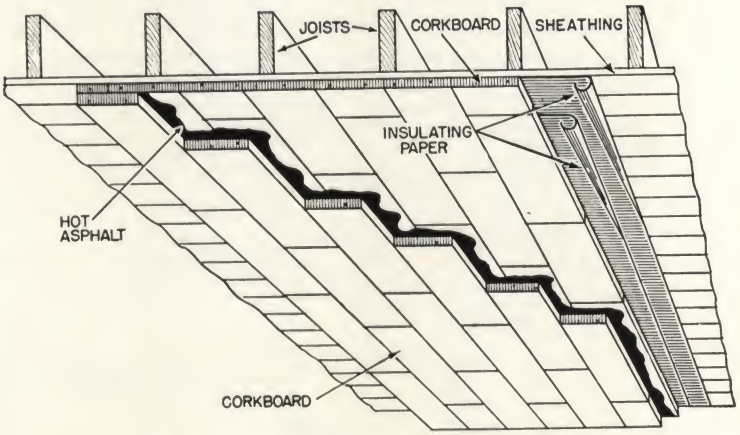
The first layer of Corinco Corkboard shall be applied in a bed of Portland cement mortar approximately ½" in thickness, mixed one part Portland cement and two parts clean, sharp sand. Each cork board shall be propped in place until a secure bond has been effected with the concrete ceiling slab. A second layer of corkboard shall be applied in hot asphalt additionally secured to the first layer with wooden skewers.

All edges and ends of corkboard shall be kept clean and all joints butted tight. Transverse joints in first layer shall be broken. All joints in second layer shall be broken with respect to those in the first layer. The exposed surfaces of Corkboard shall be finished as specified under "Finishes" on page 13.

Specification No. 8

CEILINGS—WOOD SHEATHED

(Two layers of Corkboard, First layer nailed—Second layer applied in hot asphalt.)



Directly against underside of wood sheathing two layers of waterproof insulation paper shall be applied, with edges well lapped.

The first layer of Corinco Corkboard shall be applied against paper secured to wood sheathing with special head galvanized wire nails.

A second layer of Corinco Corkboard shall be applied in hot asphalt additionally secured to the first layer with wooden skewers.

All joints must be made tight and proper care exercised to keep edges and ends clean. Transverse joints in first layer must be broken and all joints in second layer broken with respect to those in the first layer.

The exposed surfaces of Corkboard shall be finished as specified under "Finishes" on page 13.

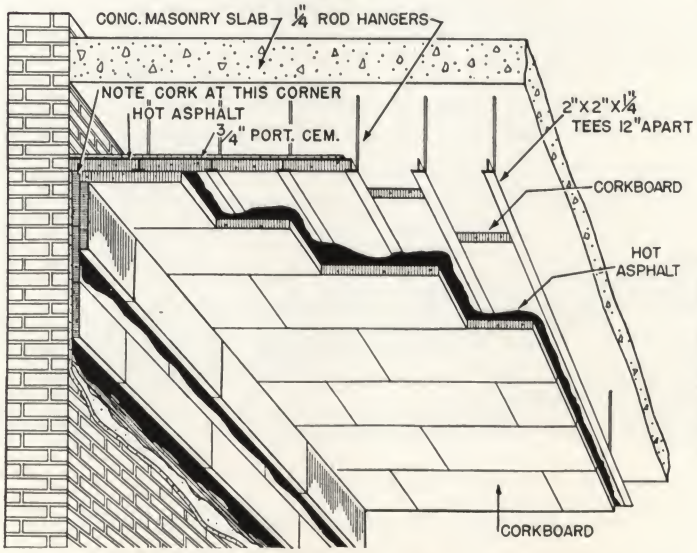
CEILINGS IN COLD STORAGE INSULATION

CONSTRUCTION • WOOD AND CONCRETE BASE FLOORS

Specification No. 9

CEILING—TEE-IRON CONSTRUCTION

(Two layers of Corkboard, First layer laid between Tee-Irons—Second layer applied underneath in hot asphalt.)



The Tee-irons shall be 2" x 2" x ¼" spaced 12" or 18" apart, ends resting on walls or other supporting structures and securely fastened to same. The tees shall be supported every 10 or 12 feet in length by hanger rods or other suitable means.

The first layer of Corinco Corkboard shall be placed between the Tee-irons with the edges rabbeted to fit on flanges of the tees tightly and rest flush with the bottom. A heavy layer of hot asphalt shall be applied over the upper surface of corkboard, followed by a coat of Portland cement mortar approximately ¾" thick, mixed one part Portland cement and three parts clean, sharp sand screeded to a smooth finish.

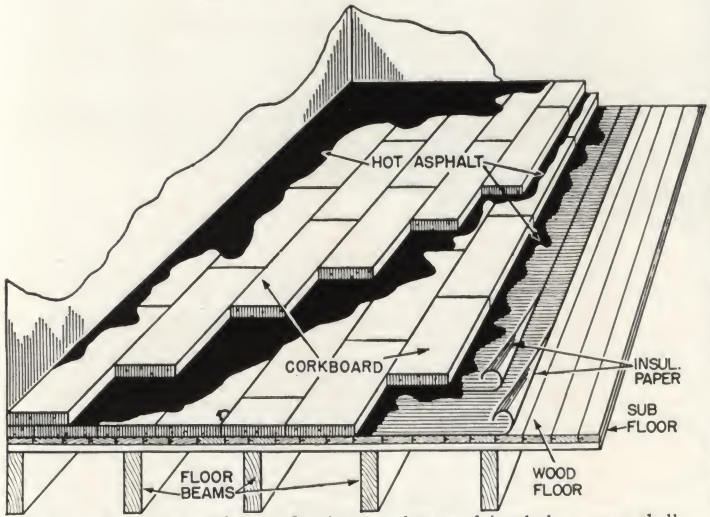
A second layer of Corinco Corkboard shall be applied to the underside of the first layer in hot asphalt, additionally secured with wooden skewers.

All joints shall be butted tight and broken with respect to those of the first layer. The exposed surfaces of Corkboard shall be finished as specified under "Finishes".

Specification No. 10

FLOORS—WOOD

(Two layers of Corkboard, both layers laid in hot asphalt.)



On top of wood sheathing or flooring two layers of insulating paper shall be laid, all edges well lapped.

The first layer of Corinco Corkboard shall be laid in hot asphalt directly on top of insulating paper.

A second layer of Corinco Corkboard shall be laid in hot asphalt upon the first layer.

The upper surface of the second layer shall be given a heavy coat of hot asphalt, left ready to receive a protective wearing finish as specified under "Finishes."

All joints must be butted tight, edges and ends kept clean.

Transverse joints in first layer must be broken. All joints in the second layer must be broken with respect to those in first layer.

Note: *If a wooden wearing finish is to be installed over upper surface of second layer, wooden sleepers 4" wide by the thickness of corkboard used shall be inserted in second layer 18" or 24" apart.*

Specification No. 11

FLOORS—CONCRETE BASE

(Two layers of Corkboard, both layers laid in hot asphalt.)

The concrete base on which the insulation is to be applied must be smooth and level. The first layer of Corinco Corkboard shall be laid on top in hot asphalt.

A second layer of Corinco Corkboard shall be laid in hot asphalt upon the first layer.

The upper surface of the second layer shall be given a heavy coat of hot asphalt, left ready to receive a protective wearing finish as specified under "Finishes."

All joints must be butted tight, edges and ends kept clean.

Transverse joints in first layer must be broken. All joints in the second layer must be broken with respect to those in first layer.

Note: *If a wooden wearing finish is to be installed over upper surface of second layer, wooden sleepers 4" wide by the thickness of corkboard used shall be inserted in second layer 18" or 24" apart.*

FINISHES

1. Portland Cement Finish: Finish exposed cork surfaces on walls, partitions, and ceilings with Portland cement plaster approximately ½" thick applied in two coats. Plaster shall be mixed in the proportions of 2 parts clean, sharp, brown sand, one part Portland cement, and not over 5% hydrated lime. The first coat shall be applied directly to cork surfaces and be approximately ¼" thick. This coat shall be scratched in two directions and allowed to dry before application of second coat.

The second coat shall be brought to an even surface by means of a darby or straight edge. After the plaster has set sufficiently, it shall be floated or troweled to a smooth, even finish. All angles and corners shall be clean and true, and outside corners protected with metal corner beads. To minimize shrinkage cracks, the plaster shall be scored into approximately 4 foot squares going through the finish to the scratch coat.

2. Corinco Emulsified Asphalt: Finish the exposed cork surfaces on walls, partitions, ceilings, etc., with Corinco Emulsified Asphalt in two coats. All surfaces to which Corinco Emulsified Asphalt is to be applied shall first be thoroughly cleaned, removing film of dust and all loose particles, etc. This can best be accomplished with a stiff fibre brush. One coat of Corinco Emulsified Asphalt Primer as taken from the container shall be troweled on, exercising care to cover all exposed cork surfaces. This coat should be permitted to dry approximately twenty-four hours.

Corinco Trowel Coat shall be applied as follows: To 1 part of Corinco trowel coat in which asbestos fibre has been incorporated at the factory, add 2 parts of clean, sharp sand. The sand must be screened and all oversize eliminated to insure a smooth and impervious finish. To this mixture add just enough clean, fresh water to bring to a proper troweling consistency. Care should be exercised to keep water content as low as possible.

Trowel on one coat mixed as above to surfaces which have previously been treated with Corinco Primer. This coat should be approximately 3/16" in thickness. After it has set sufficiently, but before it has hardened, which will depend on drying conditions, the surface shall be finished with a steel trowel. It may be tempered with a little cold water, if necessary, while troweling. Corinco Emulsified Asphalt should be applied at a temperature above 45° F.

3. Corinco Aluminum Paint: Corinco Aluminum Paint shall be applied directly to the mastic finish without any preparatory coat. Apply two coats of aluminum paint, flowing on each coat, allowing first to thoroughly dry before the second coat is applied. The aluminum paint must not be mixed until it is to be used. The proportions shall be two pounds of powder to one gallon of vehicle.

Note: *Corinco Aluminum Paint has no solvent effect on the asphalt and will not discolor. When dry it is absolutely odorless.*

4. Monolithic Concrete Wearing Floor: A Monolithic concrete wearing floor shall be laid over the floor insulation approximately 3" thick at the low point and sloping to drain approximately 1" in ten feet. Screeds shall be set to determine the proper level or slope. The concrete shall be mixed one part Portland cement, 2 parts clean, sharp sand, and 4 parts of crushed stone or gravel, and only wet enough to flush under slight tamping.

After the concrete has sufficiently set, it shall be floated to a smooth, even surface and then finished with a steel trowel.

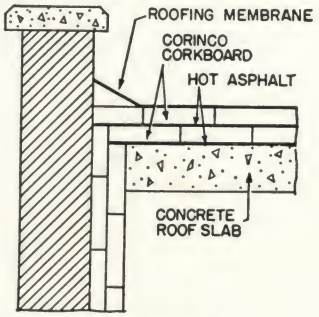


Figure 1

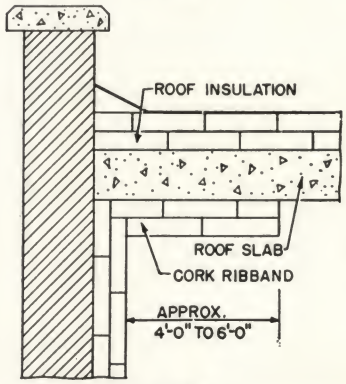


Figure 2

Specification No. 12

ROOFS—CONCRETE

(Two layers of Corkboard, both layers applied in hot asphalt.)

A slot shall be provided in concrete roof slab along all side walls wide enough to permit full thickness of insulation on walls joining with that of roof. (*See Section Figure* 1). The roof slab shall be smooth and level. Apply first layer of Corinco Corkboard in hot asphalt. Apply a second layer of Corinco Corkboard in hot asphalt on top of first layer. The upper surface of second layer shall be left uncoated over which a roofing membrane shall be laid. All joints must be butted tight, transverse joints in the first layer shall be broken and all joints in second layer shall be broken in respect to those in the first layer.

Note: *If the insulation is to be applied on top of a wooden roof structure, one layer of waterproof insulating paper with the edges lapped at least 3″ shall first be applied to the wood sheathing, and the insulation then applied in hot asphalt as specified for concrete slab.*

Ribbands

In the event it is not possible to provide a slot in roof slab permitting the joining of wall and roof insulation, a ribband of cork shall be applied to the underside of slab. This ribband shall extend out from walls approximately 4′0″ to 6′0″ and shall be applied as per specifications for ceilings. (*See Section Figure* 2).

Installing Three Layers of Corinco Corkboard on Wood Roof Deck

OOF INSULATION

Top Arch of Roof Insulated with Corinco Corkboard

CORK INSULATION STOPS CONDENSATION AND HEAT LOSSES

To prevent condensation on the underside of roofs has been the function of Corinco Corkboard in many textile mills, packing houses, tobacco factories and other manufacturing plants. Such installations have not only reduced losses on spoiled goods, but have also provided profitable savings in fuel consumption.

In determining the thickness of cork required for roof insulation consideration must be given to: (1) the nature of the roof construction; (2) the heat transmission of the roof itself; (3) the amount of humidity present during the manufacturing process; and (4) the temperature difference between the upper and under sides of the roof.

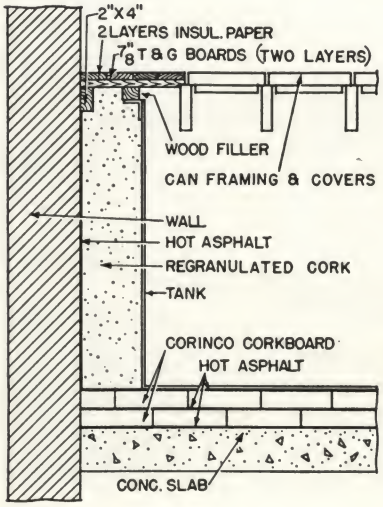
As an aid in determining heat losses, there is presented on page 17 a table of heat transmission coefficients as prepared by *"Heating & Ventilating"*—a recognized authority on this subject.

Installing Corkboard on the Roof of a Textile Mill

INSULATION FOR FREEZING TANKS

SPECIFICATION NO. 1

(Two layers of Corkboard on the bottom, sides with regranulated cork adjacent building walls.)



Bottom

The floor slab is to be smooth and level on which the first layer of Corinco Corkboard shall be embedded in hot asphalt. The second layer of Corinco Corkboard shall be applied on top of the first layer in hot asphalt, and the upper surface flooded with a heavy coat of the same material. The insulation must extend to the outside of the insulation on the sides of the tank. All joints shall be butted tight and transverse joints in the first layer broken. All joints in the second layer shall be broken with respect to those in the first layer.

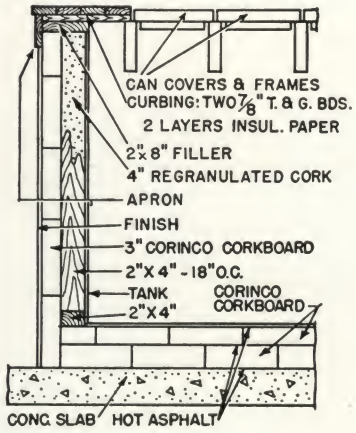
Sides

The building wall shall be mopped with hot asphalt to height of tank. The space between wall and tank, approximately 12″ wide, shall then be filled in with regranulated cork well tamped in place.

Over the top of the side insulation and extending in to meet the can framing, a curbing shall be constructed consisting of two layers of 7/8″ Tongue and Groove boards with two layers of waterproof insulating paper between. The curbing shall be properly supported as indicated on drawing.

SPECIFICATION NO. 2

(Two layers of Corkboard on bottom with regranulated and corkboard on exposed sides.)



Bottom

The bottom shall be insulated as described in Specification No. 1.

Sides

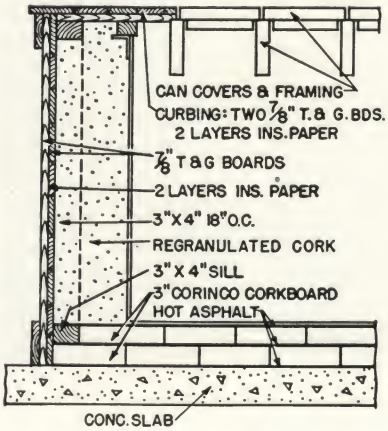
2x4 studding shall be erected against the sides of tank on 18″ centers. One layer of corkboard shall be nailed to studding with special galvanized nails. The space between the corkboard and tank shall be filled with regranulated cork well packed in place.

All joints between cork boards shall be butted tight and vertical joints broken. The exposed surfaces of corkboard shall be finished as described under "Finishes" on page 13.

A curbing shall be installed over top of insulation suitably supported as described in Specification No. 1 and indicated on drawing.

SPECIFICATION NO. 3

(Two layers of Corkboard on bottom, sides regranulated cork.)



Bottom

The bottom shall be insulated as described in Specification No. 1.

Sides

3x4 studding approximately 18″ on centers shall be erected approximately 12″ away from the tank sides. Studding shall be sheathed on the outside with two layers of 7/8″ Tongue and Groove boards with two layers of insulating paper between. The first layer of Tongue and Groove boards shall be nailed horizontally and the second layer vertically. The space between the tank and the retaining wall shall be filled with regranulated cork well tamped in place.

The curbing as described in Specification No. 1 shall be constructed over the top of the side insulation and extending in to meet the can framing as indicated on drawing.

HEAT TRANSMISSION COEFFICIENTS

MASONRY WALLS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air inside, 15 m.p.h. wind outside.

No.	Construction	Interior Materials	Exterior Materials	Thickness, Inches	A Plain Wall, no Plaster	B ½" Plaster direct on Walls, no Furring	C ½" Plaster on Wood Lath on Furring Strips, Metal Lath on Furring Strips	D ½" Painted Plasterboard, no Plaster	E ½" Plaster on 1" Rigid Insulation	F ½" Plaster on 2" Furring, ½" Rock Wool Fill	G ½" Plaster on 2" Furring, ½" Flexible Insulation	H ½" Plaster on 1½" Corkboard on ½" Cement Mortar	I
1				4	0.63	0.57	0.33	0.35	0.24	0.18	0.12	0.21	0.15
2				6	0.44	0.39	0.26	0.26	0.20	0.16	0.11	0.16	0.13
3				12	0.31	0.30	0.22	0.22	0.17	0.14	0.10	0.15	0.12
4				16	0.26	0.26	0.19	0.19	0.15	0.14	0.09	0.14	0.11
5			4" Face Brick, remainder Common Brick	4	0.61	0.72	0.35	0.40	0.26	0.19	0.13	0.22	0.16
6				8	0.49	0.46	0.29	0.30	0.22	0.16	0.12	0.19	0.14
7				12	0.35	0.34	0.24	0.24	0.20	0.15	0.10	0.16	0.12
8				16	0.28	0.26	0.20	0.20	0.16	0.13	0.09	0.15	0.11
9			Limestone or Sandstone	8	0.68	0.62	0.35	0.37	0.25	0.18	0.13	0.21	0.15
10				12	0.56	0.51	0.31	0.33	0.23	0.17	0.12	0.20	0.14
11				16	0.47	0.44	0.28	0.30	0.21	0.16	0.12	0.19	0.14
12				24	0.36	0.34	0.24	0.26	0.19	0.15	0.11	0.17	0.13
13			Concrete	8	0.68	0.62	0.35	0.37	0.25	0.19	0.13	0.21	0.15
14				10	0.62	0.56	0.33	0.35	0.24	0.18	0.12	0.20	0.15
15				16	0.47	0.44	0.28	0.30	0.21	0.16	0.12	0.19	0.14
16				20	0.41	0.38	0.26	0.27	0.20	0.15	0.11	0.17	0.13
17			Hollow Clay Tile With 1" Stucco Exterior Finish	4	0.53	0.49	0.30	0.32	0.23	0.17	0.12	0.19	0.14
18				8	0.39	0.37	0.25	0.26	0.20	0.15	0.11	0.17	0.13
19				10	0.35	0.33	0.23	0.24	0.18	0.14	0.11	0.16	0.12
20				12	0.31	0.29	0.21	0.22	0.17	0.13	0.10	0.15	0.12
21				16	0.24	0.23	0.18	0.19	0.15	0.12	0.09	0.14	0.11
22			Hollow Gypsum Tile, 1" Stucco Ext. Fin.	4	0.33	0.31	0.22	0.23	0.18	0.14	0.10	0.16	0.12
23			Cinder Blocks With one Air Cell Across Heat Flow	8	0.42	0.39	0.26	0.27	0.20	0.16	0.11	0.18	0.13
24				12	0.36	0.34	0.24	0.25	0.19	0.15	0.11	0.17	0.13
25			Cement Blocks With one Air Cell Across Heat Flow	8	0.56	0.52	0.31	0.33	0.23	0.17	0.12	0.20	0.14
26				12	0.49	0.46	0.29	0.30	0.22	0.16	0.12	0.19	0.14
27			4" Brick or 4" Cut Stone with Hollow Clay Tile Backing of This Thickness	6	0.37	0.35	0.24	0.25	0.19	0.16	0.11	0.17	0.13
28				8	0.36	0.34	0.24	0.25	0.19	0.15	0.11	0.17	0.13
29				10	0.32	0.31	0.22	0.23	0.18	0.14	0.10	0.16	0.12
30				12	0.28	0.26	0.20	0.20	0.16	0.13	0.10	0.15	0.11
31			4" Brick or 4" Cut Stone with Concrete Backing of This Thickness	6	0.61	0.56	0.33	0.35	0.24	0.18	0.13	0.20	0.15
32				10	0.51	0.47	0.30	0.31	0.22	0.17	0.12	0.19	0.14
33				16	0.41	0.36	0.26	0.27	0.20	0.15	0.11	0.17	0.13
34			4" Brick Veneer With Cinder Block Backing of This Thickness	8	0.35	0.33	0.24	0.24	0.19	0.14	0.11	0.16	0.12
35				12	0.31	0.30	0.22	0.22	0.17	0.14	0.10	0.16	0.12
36			With Cement Block Backing of This Thickness	8	0.45	0.42	0.27	0.29	0.21	0.16	0.12	0.18	0.13
37				12	0.40	0.38	0.26	0.27	0.20	0.15	0.11	0.17	0.13
38			4" Cut Stone With Common Brick Backing of This Thickness	8	0.37	0.35	0.24	0.25	0.19	0.15	0.11	0.17	0.13
39				12	0.28	0.27	0.20	0.21	0.16	0.13	0.10	0.15	0.12
40				16	0.23	0.22	0.17	0.18	0.15	0.12	0.09	0.13	0.11

CONCRETE FLOORS & CEILINGS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air both sides.

Construction No.	Construction Type	Material under Floor	Thickness of Concrete	A Bare Concrete Floor	B Y.P. Flooring on Wood Sleepers Embedded in Concrete	C H.W. Flooring on Y.P. Sub-Flooring on Wood Sleepers Embedded in Concrete	D 1" Tile or Terrazzo on Concrete	E ¼" Battleship Linoleum on Concrete
62	A	Floor Slab Exposed. No Finished Ceiling Beneath.	4	0.63	0.39	0.30	0.60	0.43
63			6	0.57	0.37	0.26	0.55	0.40
64			8	0.52	0.35	0.27	0.50	0.38
65			10	0.48	0.33	0.26	0.46	0.35
66	A	½" Plaster. Direct on Under Surface of Concrete	4	0.56	0.37	0.26	0.55	0.40
67			6	0.52	0.35	0.27	0.50	0.38
68			8	0.48	0.33	0.26	0.47	0.36
69			10	0.45	0.31	0.25	0.43	0.34
70	A	¾" Plaster on Wood or Metal Lath (Suspended or Furred Ceiling)	4	0.37	0.27	0.22	0.36	0.29
71			6	0.35	0.26	0.21	0.34	0.28
72			8	0.33	0.25	0.21	0.32	0.26
73			10	0.31	0.24	0.20	0.30	0.25
74	A	½" Plaster on ½" Rigid Insulation (Suspended or Furred Ceiling)	4	0.24	0.20	0.17	0.24	0.21
75			6	0.23	0.19	0.16	0.23	0.20
76			8	0.22	0.18	0.16	0.22	0.19
77			10	0.22	0.18	0.16	0.21	0.19
78	A	½" Plaster on 1½" Corkboard in 1½" Cement Mortar on Concrete	4	0.15	0.13	0.12	0.15	0.13
79			6	0.14	0.13	0.11	0.14	0.13
80			8	0.14	0.12	0.11	0.14	0.13
81			10	0.14	0.12	0.11	0.14	0.12
82	B	Stone Concrete Directly on Ground, no Insulation, no Cinder Concrete	4	1.05	0.52	0.37	0.96	0.59
83			6	0.69	0.46	0.34	0.83	0.54
84			8	0.78	0.44	0.32	0.73	0.49
85			10	0.68	0.41	0.31	0.65	0.46
86	B	3" Cinder Concrete on Ground, Insulation on top of this, under Stone Concrete.	No Insulation	4	0.64	0.40	0.30	0.61	0.44
87			No Insulation	6	0.53	0.35	0.27	0.51	0.38
88			1" Rigid Insulat.	4 or 6	0.21	0.16	0.15	0.21	0.18
89			2" Corkboard	4 or 6	0.12	0.11	0.10	0.12	0.11

WOOD FRAME PITCHED ROOFS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air inside, 15 m.p.h. wind outside.

Construction No.	Roofing Surface	Type Insulation	No Ceiling	A ½" Plaster on Wood or Metal Lath or ⅜" Plasterboard	B ½" Rigid Insulation without ½" Plaster	C ½" Plaster on 1" Rigid Insulation	D ½" Plaster on ½" Corkboard	E ½" Plaster on 2" Corkboard	F
90	Wood Shingles on Wood Strips	No Insulation	0.45	0.28	0.22	0.17	0.12	0.10	
91	Asphalt Composition, Tile or Slate on Wood Sheathing	No Insulation	0.54	0.31	0.23	0.17	0.13	0.10	
92	Wood Shingles on Wood Strips, or Asphalt Shingles, Composition Roofing, or Slate or Tile Roofing on Wood Sheathing	½" Flexible	0.25	0.16	0.15	0.12	0.098	0.084	
93		1" Flexible	0.17	0.12	0.12	0.10	0.083	0.073	
94		Aluminum Foil on one side of Air Space	—	0.23	0.18	0.14	0.11	0.092	
95		3⅝" Rockwool	—	0.063	0.059	0.054	0.050	0.045	

MASONRY PARTITIONS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air both sides.

No.		No Plaster	Plastered One Side	Plastered Both Sides
96	4" Hollow Clay Tile	0.43	0.40	0.36
97	4" Common Brick	0.49	0.45	0.43
98	4" Hollow Gypsum Tile	0.29	0.26	0.27

WOOD FRAME WALLS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air inside, 15 m.p.h. wind outside.

No.	Construction Material	Exterior Materials	Type Sheathing: A Plain Wall, no Plaster ½" Plaster Board on ½" Studding	B ½" Plaster on Wood Lath or Metal Lath, or on ½" Plaster Board	C ½" Plaster on ½" Rigid Insulation on Studding	D ½" Plaster on 1" Rigid Insulation on Studding	E ½" Plaster on 1½" Corkboard on Studding	F Same as E, but with Stud faced one side with Bright Aluminum Foil	G Same as F plus ½" Flexible Insulation against Sheathing	H Same as G plus 3⅝" Rock Wool between Studding
41	Wood Siding or Clapboard	Wood Sheathing - 1"	0.25	0.24	0.19	0.15	0.11	0.19	0.17	0.060
42		Rigid Insulator Sheathing ½"	0.23	0.22	0.18	0.14	0.11	0.18	0.16	0.059
43		Plasterboard Sheathing - ½"	0.28	0.27	0.20	0.16	0.12	0.21	0.18	0.062
44	Wood Shingles	Wood Sheathing - 1"	0.24	0.23	0.18	0.14	0.11	0.18	0.16	0.059
45		Rigid Insulator Sheathing ½"	0.19	0.19	0.15	0.12	0.10	0.15	0.14	0.056
46		Plasterboard Sheathing - ½"	0.24	0.24	0.19	0.15	0.11	0.19	0.16	0.060
47	Stucco	Wood Sheathing - 1"	0.31	0.29	0.22	0.16	0.12	0.22	0.19	0.063
48		Rigid Insulator Sheathing - ½"	0.27	0.26	0.20	0.16	0.12	0.20	0.18	0.062
49		Plasterboard Sheathing - ½"	0.40	0.38	0.26	0.19	0.14	0.27	0.22	0.066
50	Brick Veneer	Wood Sheathing - 1"	0.23	0.23	0.18	0.14	0.11	0.18	0.16	0.059
51		Rigid Insulator Sheathing - ½"	0.23	0.22	0.18	0.14	0.11	0.18	0.16	0.059
52		Plasterboard Sheathing - ½"	0.31	0.30	0.22	0.17	0.12	0.22	0.19	0.063

FLAT & BUILT-UP ROOFS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air inside, 15 m.p.h. wind outside.

Construct No.		Type of Roof Deck	Rigid Insulation: A No Insulation	B ½"	C 1"	D 1½"	E 2"	Corkboard: F 1"	G 1½"	H 2"
99	Precast	1⅝	0.83	0.37	0.23	0.17	0.14	0.22	0.16	0.13
100	Concrete	2	0.61	0.36	0.23	0.17	0.14	0.22	0.16	0.13
101		4	0.71	0.34	0.22	0.17	0.14	0.21	0.16	0.12
102		6	0.64	0.32	0.21	0.16	0.13	0.20	0.15	0.12
103	Wood	1	0.50	0.28	0.20	0.15	0.12	0.19	0.14	0.11
104		1½	0.37	0.24	0.17	0.14	0.11	0.17	0.13	0.11
105		2	0.32	0.22	0.16	0.13	0.11	0.16	0.12	0.10
106		4	0.18	0.14	0.12	0.10	0.085	0.11	0.094	0.081
107	2" Gypsum Fiber Concrete on ½" Plasterboard	2½	0.38	0.24	0.18	0.14	0.12	0.17	0.13	0.11
108		3½	0.31	0.21	0.16	0.13	0.11	0.15	0.12	0.10
109	Flat Metal		0.94	0.39	0.24	0.18	0.14	0.23	0.16	0.13
110	Precast	1⅝	0.42	0.26	0.18	0.14	0.12	0.18	0.14	0.11
111	Concrete	2	0.42	0.26	0.18	0.14	0.12	0.18	0.14	0.11
112		4	0.39	0.25	0.18	0.14	0.12	0.17	0.14	0.11
113		6	0.37	0.24	0.17	0.14	0.11	0.17	0.13	0.11
114	Wood	1	0.32	0.21	0.16	0.13	0.11	0.15	0.12	0.10
115		1½	0.26	0.23	0.15	0.12	0.10	0.14	0.11	0.095
116		2	0.24	0.21	0.14	0.11	0.097	0.13	0.11	0.091
117		4	0.15	0.12	0.10	0.088	0.078	0.10	0.085	0.074
118	2" Gypsum Fiber Concrete on ½" Plasterboard	2½	0.27	0.19	0.15	0.12	0.10	0.14	0.11	0.096
119		3½	0.23	0.17	0.13	0.11	0.096	0.13	0.11	0.090
120	Flat Metal	—	0.45	0.27	0.19	0.15	0.12	0.18	0.14	0.11

WOOD FRAME PARTITIONS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air both sides.

No.	Construction	Single Partitions (one Side open) A	Double Partitions: B Air Spaces Between Studding	C Gypsum Fill Between Studding	D One side of Stud Space Faced with bright Alum. Foil	E ½" Flexible Insulation Between Studding (in Air Space)	F 3⅝" Rock Wool Fill Between Studding
53	Plaster on Wood Lath or ⅜" Plasterboard	0.60	0.33	0.11	0.24	0.21	0.063
54	Plaster on Metal Lath	0.68	0.38	0.11	0.27	0.22	0.065

WOOD FRAME FLOORS & CEILINGS

Figures are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air both sides.

No.	Ceiling Material	Insulation Between Joists	A No Flooring	B Flooring (Y.P.) on Joists	C Flooring (Y.P.) on ½" Rigid Insulation on Joists	D H.W. Flooring on Y.P. Sub-Flooring on Joists	E ¼" Battleship Linoleum on Y.P. Flooring
55	No Ceiling	No Insulation	—	0.45	0.27	0.34	0.34
56	Plaster on Wood Lath or ⅜" Plasterboard	No Insulation	0.60	0.28	0.20	0.24	0.24
57	Plaster on ½" Rigid Insulator	No Insulation	0.34	0.21	0.16	0.18	0.18
58	Metal Lath Plaster	½" Rigid or Flexible	0.25	0.17	0.14	0.15	0.15
59	Metal Lath Plaster	Bright Aluminum Foil	0.29	0.22	0.17	0.19	0.19
60	Metal Lath Plaster	3⅝" Rock Wool	0.066	0.062	0.056	0.059	0.059
61	1½" Corkboard & Plaster	No Insulation	0.16	0.12	0.10	0.11	0.11

WINDOWS & SKYLIGHTS

121	Single Sash	Double Strength Window Glass ⅛ in Thick	1.24
122	Double Sash		0.56
123	Triple Sash		0.36
124	Double Glazed Single Sash		0.63
125	Plate Glass ⅜ in Thick		1.19

WOOD & METAL DOORS

126	Thin Wood Doors with Glass	1.24
127	1" Wood Doors	0.70
128	2" Wood Doors	0.45
129	3" Wood Doors	0.30
130	Metal and Asbestos Doors	0.65

Figures for constructions 121 to 130 are in B.t.u. per hour per square foot per degree temperature difference, air to air, still air inside, 15 m.p.h. wind outside.

CORINCO CORK PIPE

Applying Cork Covers on Screwed Fittings

Securing Covering with Copper Clad Wire

Smoothing Joints and Chipped Edges with Seam Filler and Finishing with Corinco Cork Covering Paint

EFFECTIVE COLD LINE INSULATION

Corinco Cork Pipe Covering is another link in the chain of protection against refrigeration loss. It has the same qualities and is made with the same precision as Corinco Corkboard. It is equally successful in resisting the attacks of moisture and ice—the greatest foes of insulation.

As a result of the great savings created by cork in the amount of refrigeration required, it has been universally accepted as standard insulation on brine and ammonia lines, on drinking water systems and cold water lines, and on freon lines.

Corinco Cork Pipe Covering is molded to fit with precision snugness on all sizes of pipe and all types of fittings. It is furnished in three thicknesses to meet the varying service conditions as shown in the table below.

PIPE HANGERS

All pipe lines to be insulated with Corinco Covering should be supported by hangers and the covering protected by a sheet iron shield where the pipe rests in the hanger. This shield should be shaped to fit the covering and should extend 4" away from each side of the hanger (see illustration below) and should extend up the sides to the level center of the pipe. It is not advisable to apply the hanger direct to the pipes.

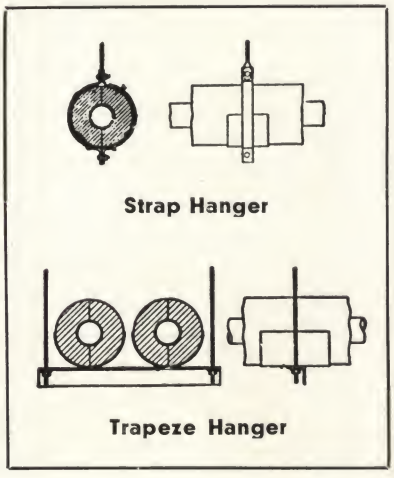


TABLE I: TABLE OF THICKNESSES

Type of Cork Pipe Covering	Thickness in Inches*	Temperature Range
Ice Water Thickness	1.21 to 1.81	35°F. or above
Brine Thickness	1.71 to 3.00	35°F. to 0°F.
Special Thick Brine	2.52 to 4.00	0° F. or below

* Depending on variations in pipe sizes.

TABLE II: TABLE FOR SPACING

Type of Cork Pipe Covering	Space between parallel pipes	Space between pipes and adjacent surfaces
ICE WATER THICKNESS		
Screwed Fittings up to and including 6-inch	6 inches	4 inches
Screwed Fittings larger than 6-inch	10 inches	5 inches
Flanged Fittings	10 inches	5 inches
BRINE THICKNESS		
Screwed Fittings up to and including 6-inch	8 inches	6 inches
Screwed Fittings larger than 6-inch	14 inches	8 inches
Flanged Fittings	14 inches	8 inches
SPECIAL THICK BRINE		
Screwed Fittings up to and including 3-inch	10 inches	8 inches
Screwed Fittings larger than 3-inch	18 inches	12 inches
Flanged Fittings	18 inches	12 inches

CORINCO MOLDED CORK COVERING AND CORK CENTERS

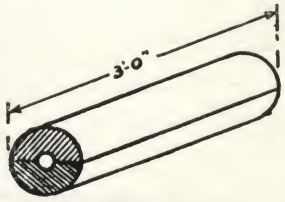


Fig. 1
Three Sectional Feet of Molded Corinco Cork Covering

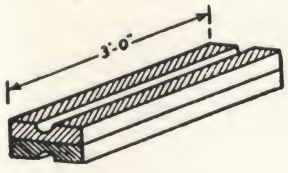


Fig. 2
Three Sectional Feet of Molded Corinco Cork Centers

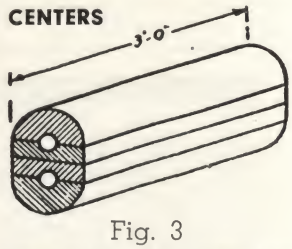


Fig. 3
Insulation of Pipes too close together for Regular Sectional Corinco Cork Covering

SPECIFICATION FOR THE APPLICATION OF CORINCO CORK COVERING

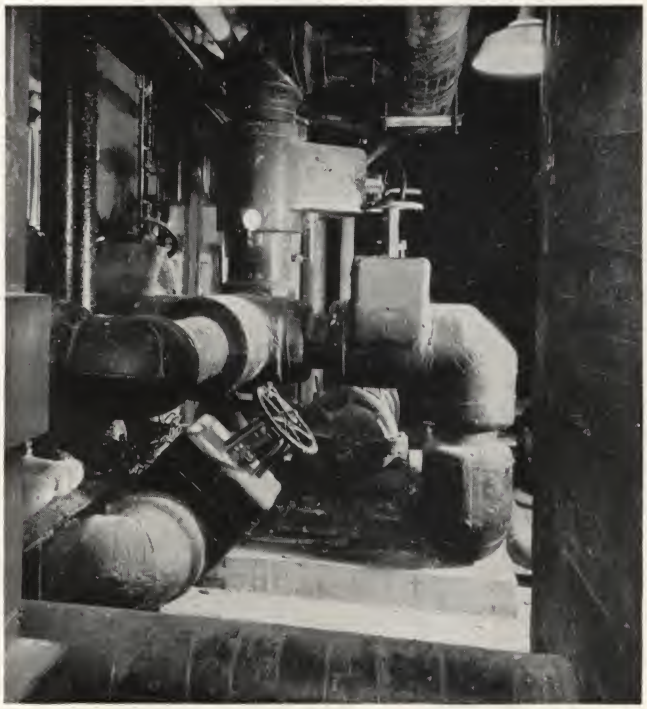
GENERAL

All pipe and fittings must be spaced as indicated in Table II.; they shall be cleaned of all rust, scale and dirt, dry and free of frost, and tested for tightness before covering is applied. Outside hangers and shields shall be used as illustrated. Where pipe passes through an insulated wall of a refrigerated room, the covering shall continue 6″ beyond the wall inside of room. Openings in walls and floors for insulated pipes must be large enough to permit full thickness of insulation.

APPLICATION

FITTINGS—Apply cork covers on screwed fittings first, cementing all joints with Corinco Waterproof Cement, and secure in place with copper clad steel wire. Fill in all spaces between cork covers and fittings with Corinco Brine Putty.

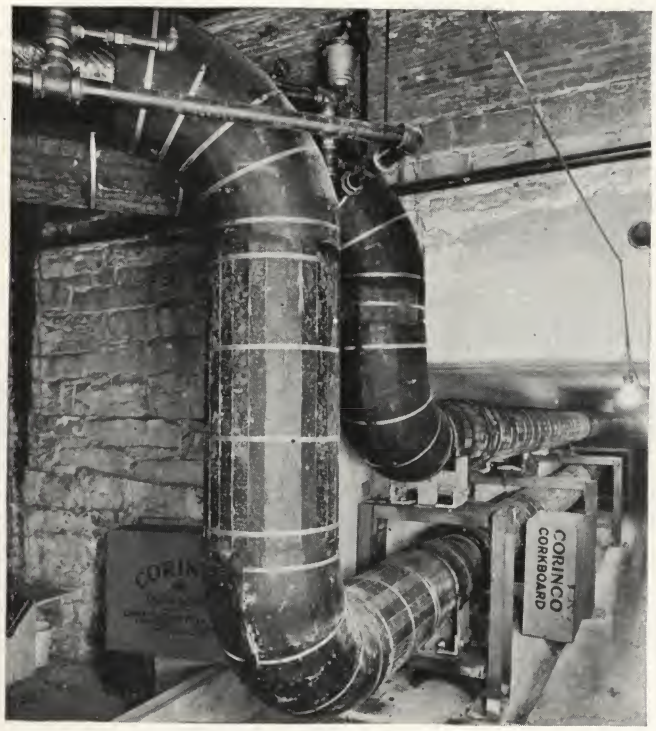
Flanged fitting covers shall be applied after covering on piping has been installed. Covers shall be applied in a similar manner as for screwed fitting covers, with the exception that they shall rest upon outside of covering on pipe runs.



Molded and Factory Assembled Pipe Covering

PIPE RUNS—Apply sectional covering on pipe runs butting tightly against screwed fitting covers and against the flange bolts of flanged fittings. All end joints shall be broken by starting with half section pieces 18″ long, following with full length sections 36″ long. Longitudinal joints shall be vertical with pipe. All joints, both end and horizontal shall be cemented with Corinco Waterproof Cement and covering secured in place with copper clad steel wire applied straight and tight, using at least six wires per section.

FINISH—To complete the installation, fill and smooth all seams and chipped edges with Corinco Seam Filler and then apply one coat of Corinco Cork Covering Paint. (Where additional protection or decorative finish is desired consult our nearest branch office).

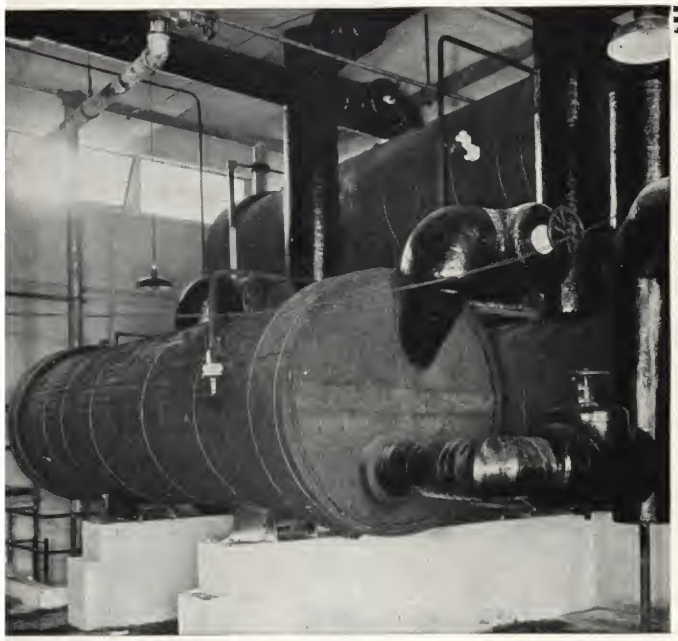


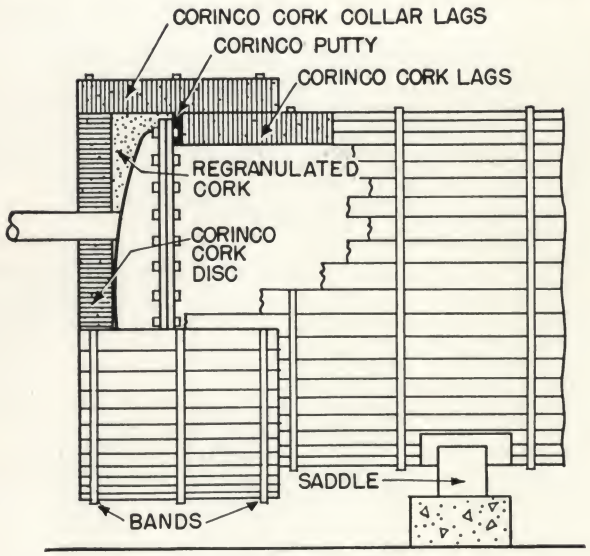
Lagged Pipe Covering Assembled on the Job

NOTE

For pipe and fittings which are not molded or factory assembled, Corinco Cork Lagging will be furnished. Lagging shall be carefully assembled on the job and applied as for fitting covers and sectional coverings prepared at the factory.

BRINE COOLERS • CYLINDRICAL TANKS





Horizontal Brine Cooler

Specification No. 2

CYLINDRICAL TANKS: WELDED ENDS

The cylindrical body shall be insulated with one layer of Corinco Cork Lagging, beveled to the proper diameter and coated inside and out with mineral rubber. The lagging shall be secured to the tank with copper-clad steel wires spaced not more than 9″ apart. The ends shall be insulated with Corinco Cork Discs supported in place by the body lagging which shall extend beyond the tank to the outer surface of cork disc.

Finish

Seams shall be filled and all chipped and raw edges smoothed with Corinco Seam Filler and then the entire surface given one coat of Corinco Cork Covering Paint.

Specifications for insulating Brine Coolers and Cylindrical Tanks

Specification No. 1

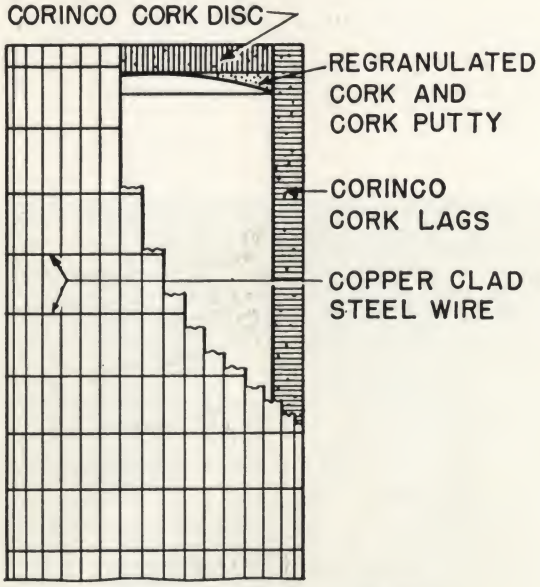
BRINE COOLERS

The cylindrical body shall be insulated with one layer of Corinco Cork Lagging. Lagging shall be beveled to the proper diameter and shall be coated inside and out with mineral rubber. The lags shall be applied with Corinco Waterproof Cement between all joints and additionally secured with galvanized iron bands approximately 1″ wide, drawn up tight with clips and bolts. These bands shall be spaced approximately 12″ apart.

The flanged ends of the cooler shall be insulated with Corinco Cork Discs supported by a cork lagging collar applied over the flanges. This lagging shall extend to the outer surface of the disc and have a bearing on the body lagging at least 12″. The collar lags and discs shall be applied in a similar manner as specified for body lags and be removable. All spaces between tank and lagging shall be filled with Corinco Brine Putty and spaces between discs and tank ends must be filled with regranulated cork.

Finish

After all insulation is applied, all chipped edges shall be filled and smoothed with Corinco Seam Filler and the entire surface then given one coat of Corinco Cork Covering Paint.



Vertical Cylindrical Tank

RECOMMENDED THICKNESSES

Thickness	Temperature Range
2 inches	55° to 65° Fahrenheit
3 inches	32° to 55° Fahrenheit
4 inches	20° to 32° Fahrenheit
5 inches	5° to 20° Fahrenheit
6 inches	—5° to +5° Fahrenheit
8 inches	—15° to —5° Fahrenheit

CORINCO MARINE INSULATION

The "Tuscan Star"—595,000 Cubic Feet of Insulated Space

To prevent spoilage of perishable goods in transit, large ocean liners and freight carrying vessels have installed low temperature insulation plants. Corinco Corkboard has been used extensively for this service.

Entire cargo holds have been insulated without impairing the efficiency of the vessel. Holds have been insulated in such a manner that automobiles and other large cargo can be accommodated when perishables are not carried.

The Cork Insulation Co., Inc., has handled complete installations which included Corinco Corkboard and Corinco Cork Pipe Covering on many types of vessels—from fishing schooners to trans-oceanic liners.

Fishing Schooner Insulated With Corinco Corkboard

●

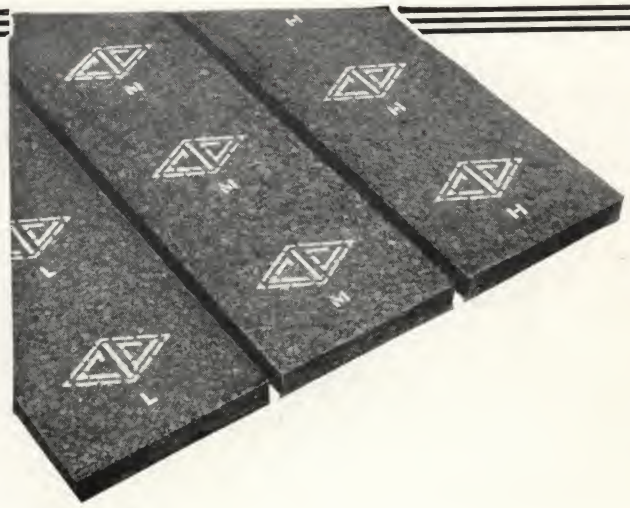
One of Several Great Lakes Transit Corporation Ships Insulated by Cork Insulation Co.

●

For information and detailed specifications consult the Marine Division of our nearest branch office

Freezing Compartments in Cargo Vessel

CORINCO MACHINERY
FOR ABATEMENT O



NOISE AND VIBRATION

Modern business, realizing that noise and vibration are often the cause of fatigue, carelessness and accidents, has taken definite measures to combat them. One of the most effective methods of eliminating noise is to isolate vibration which, in many cases, is the direct cause.

Aside from the above, vibration has a destructive effect on the machinery itself to say nothing of its adverse effect upon the building structure. Since cork contains over 50% air by volume, which is hermetically sealed in millions of tiny cells, it has been successfully used as a vibration-absorbing cushion. This cork cushion never "hardens" or "cakes", but retains its resiliency indefinitely.

CORINCO MACHINERY ISOLATION CORKBOARD

Corinco Machinery Isolation Corkboard is especially designed to reduce machinery vibration and noise. It is composed entirely of pure, granulated cork which has been carefully screened, placed in molds, compressed to the proper density, and baked. Its density is greater than that of ordinary corkboard to support machinery loads. Properly installed Corinco Machinery Isolation Corkboard will appreciably reduce noise and vibration.

Sizes

Corinco Machinery Isolation Corkboard is manufactured in our plant at Wilmington, Delaware, in standard 12 x 36 inch units and in thicknesses of 1, 1½, 2, 3 and 4 inches. These sizes are all available in three densities: LIGHT, MEDIUM, and HEAVY. These densities, to meet various requirements, are based on the number of pounds of cork compressed into one board foot.

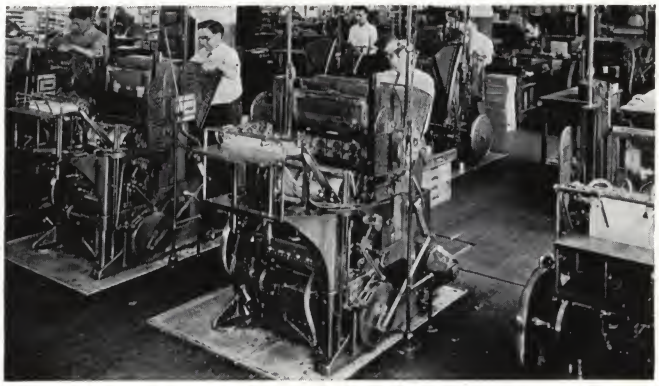
Standard size boards can be cut or sawed in the same manner as lumber to any desired dimension. Larger mats can be made in sections and cemented together if so required.

Shipping

To prevent breakage and damage Corinco Machinery Isolation Corkboard is shipped in strong fibre cartons each containing 72 board feet. Average shipping weights per board foot are as follows:

Light Density, 1.25 lbs.; Medium Density, 1.45 lbs.; Heavy Density, 1.75 lbs.

SOLATION CORKBOARD
IOISE AND VIBRATION



WHERE REQUIRED

The scope of vibration and noise abatement is practically unlimited. In every phase of modern construction, manufacture and operation, this problem is encountered. In the design of hotels, hospitals, libraries, etc., noise must be reduced to a minimum. In factories the vibration of drill presses, motors, fans, pneumatic hammers, etc. must be eliminated. In short, the applications of corkboard for the isolation of noise and vibration are innumerable.

DENSITY AND THICKNESS TO USE

(Tests made on 2 in. material.)

Loads in Lbs. per Sq. Ft.	COMPRESSION DATA Deformation in Inches		
	Light Density	Medium Density	Heavy Density
5,000	.20	.15	.11
10,000	.53	.35	.26
15,000	.80	.55	.43
20,000	.95	.73	.58
25,000	—	.85	.70
30,000	—	.94	.79
35,000	—	—	.86

DENSITY FOR VARIOUS TYPES OF MACHINERY

For average conditions, we recommend the various grades as follows:

Density	*Type of Machinery*
LIGHT	Small motors, fans, etc.
MEDIUM	Light machinery, medium size generators, motors, fans, etc.
HEAVY	Large and heavy machines, compressors, motors, etc.

INSTALLATION DETAILS

The details below illustrate typical methods of using Corinco Machinery Isolation Corkboard for the installation of light, medium and heavy machinery.

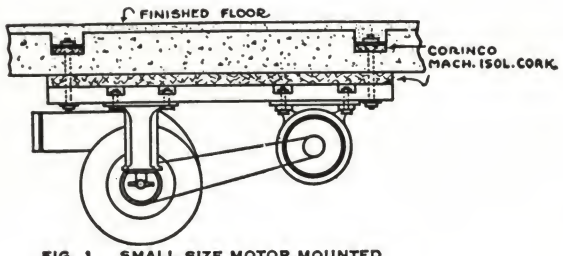


FIG. 1 SMALL SIZE MOTOR MOUNTED ON CEILING SLAB.

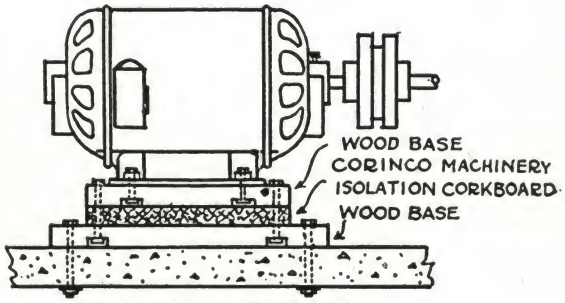


FIG. 2 MEDIUM SIZE MOTORS MOUNTED ON CONCRETE FLOOR.

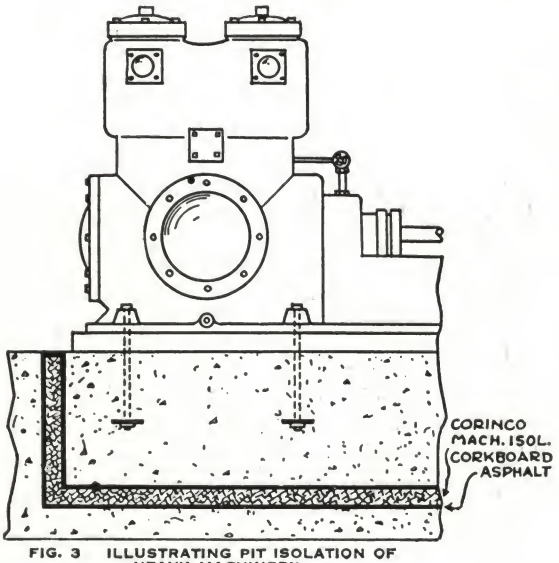


FIG. 3 ILLUSTRATING PIT ISOLATION OF HEAVY MACHINERY.

In determining the proper grade to use, consideration must be given to surroundings, size and weight of machine, operating speed, etc. Our Engineering Department is always glad to submit sketches showing how Corinco Machinery Isolation Corkboard should be installed on specific jobs.

CORK

CORINCO INSULATION PRODUCTS

VARIED INSTALLATIONS

CORK INSULATION COMPANY, INC.

155 EAST 44th STREET NEW YORK, N. Y.

Branch Offices

BOSTON, MASS.
332 "A" Street

PHILADELPHIA, PA.
17th & Sansom Streets

CHICAGO, ILL.
Corinco Insulation Co., Inc.
320 North La Salle Street

LOS ANGELES, CAL.
4804 De Kalb Street

ST. LOUIS, MO.
2711 Olive Street

WASHINGTON, D. C.
1425 "H" Street, N. W.

SEATTLE, WASH.
2410 First Avenue, South

SAN FRANCISCO, CAL.
462 Bryant Street

Factory: Foot of Christiana Avenue, WILMINGTON, DELAWARE

JOINTITE

CORK PRODUCTS

MUNDET CORK CORPORATION
BROOKLYN, N. Y.

INDEX OF PRODUCTS

Cork and Its History — Page 2
Origin, Method of Manufacture, Sizes and Weights of Mundet "Jointite" Corkboard.

Facilities of Mundet Cork Corporation — Page 3
Sales, Service, Contracting and Guarantee.

Mundet "Jointite" Corkboard — Pages 4 to 9
For the Prevention of Heat Transmission in Cold Storage Plants, Rooms, Offices and Miscellaneous Buildings Generally.

Mundet "Jointite" Moulded Cork Pipe Covering — Page 12
For the Insulation of All Cold Lines.

Mundet "Jointite" Cork Lagging — Page 13
For Insulating Cylindrical Tanks and Coolers.

Roof Wall and Floor Insulation — Pages 10 to 17
Prevention of Heat Losses and Condensation on Walls and Ceilings.

Mundet Natural Cork Isolation Mats and Machinery Isolation Cork — Pages 18 and 19

MISCELLANEOUS SPECIALTIES

Mundet "Jointite" Cork Tile Flooring **Mundet "Jointite" Bulletin Board**

Catalogs of these products of Mundet Cork Corporation are filed in other sections of SWEET'S CATALOG FILE (ARCHITECTURAL)

MUNDET CORK CORPORATION

65 South 11th Street, Brooklyn, N. Y. ● Insulation Factory, Hillside, N. J.

BRANCHES: ALBANY, N. Y.; ATLANTA, GA.; BOSTON, MASS.; CHICAGO, ILL.; CINCINNATI, OHIO; DALLAS, TEX.; DETROIT, MICH.; HOUSTON, TEX.; KANSAS CITY, MO.; LOS ANGELES, CAL.; MEMPHIS, TENN.; NEW ORLEANS, LA.; PHILADELPHIA, PA.; ST. LOUIS, MO.; SAN FRANCISCO, CAL.; SYRACUSE, N. Y.
CANADA: MUNDET CORK AND INSULATION, LTD., Montreal, Toronto, Winnipeg, Vancouver
GREAT BRITAIN: London, England, MUNDET CORK PRODUCTS, LTD.
PORTUGAL: Seixal, MUNDET ET CIA

DISTRIBUTORS: BALTIMORE, MD., McCormick Asbestos Co.; BUFFALO, N. Y., Claxton Asbestos Co.; CHARLOTTE, N. C., Geo. A. White & Co.; CLEVELAND, OHIO, Standard Asbestos & Mfg. Co.; HARTFORD, CONN., The Hartford Cement Co.; MINNEAPOLIS, MINN., Asbestos Building Materials Co.; NASHVILLE, TENN., John Bouchard & Sons, Co.; NORFOLK, VA., F. H. Gaskins Corp.; OKLAHOMA CITY, OKLA., Standard Roofing & Material Co.; PORTLAND, ORE., Pacific Asbestos & Supply Co.; RICHMOND, VA., Virginia Insulation Co.; SALT LAKE CITY, UTAH, Louis A. Roser; SEATTLE, WASH., Pioneer Sand & Gravel Co.; TULSA, OKLA., Standard Roofing & Material Co.; UTICA, N. Y., George Weisenberger.

Jointite TRADE MARK

CORK PRODUCTS

A COMPENDIUM OF INFORMATION ON THE USES OF CORK FOR INSULATION PURPOSES

- REFRIGERATION
- SOUNDPROOFING
- HEAT PREVENTION
- HEAT CONSERVATION
- VIBRATION DEADENING
- CONDENSATION PREVENTION

MUNDET CORK CORPORATION

CORK ... its History

In the land contiguous to the Western Mediterranean and comprising parts of Spain, Portugal and Morocco, grows an evergreen known as the Cork Oak *(Querqus Suber)*. This tree must survive a tremendous amount of heat since it grows in tropical and semi-tropical zones. Nature has provided for this by promoting a growth which covers the trunk and limbs of the tree and effectively insulates it against the intense heat. This growth (or bark) is the cork of commerce. At periodic intervals the trees are stripped of this bark, which is then processed, baled and shipped to manufacturing centers in Europe and the United States. Various manufacturing plants produce a multitudinous variety of cork products including cork insulation.

Cork has been used for many centuries. We find that it was fabricated by the ancients into shoe soles, floats of bottle stoppers. In the past fifty years the uses of cork have multiplied many times. This peculiar and versatile material is now employed in all of the manufacturing and process industries. It has even invaded the field of decorative art, and it may truly be regarded as a necessary concomitant of civilization.

WHY CORK IS AN INSULATOR

As explained above, Nature provided a covering that would protect the Cork Oak from the attack of tropical heat. This is accomplished by shaping a covering of relatively even thickness containing a multitude of minute air particles each hermetically sealed one from the other. Each particle of entrapped air is so small that it will not permit the setting up of air currents and in this way heat penetration is prevented. Furthermore, due to its granular structure, cork has no capillarity, while practically all other insulating materials are of a fibrous nature and have a high degree of capillarity.

Although primarily designed for use in the Refrigeration and Cold Storage Industries, Mundet "Jointite" Cork Insulation has a wide range of applications, as text on the following pages will make clear.

THE MANUFACTURE OF CORKBOARD

The cork bark used for insulation is first ground up into particles or granules of from ⅜ to ⅝ in. in size. These are filled into moulds and hydraulically pressed to the required density. The moulds are then placed in an oven maintained at a relatively high temperature for a period of time dependent upon the thickness of insulation involved. The cork is kept under compression in the moulds throughout the baking process. The heat liquefies the gum or rosin that is peculiar to this type of bark. This gum thoroughly binds the granules together and hermetically seals one from the other, producing a solid slab of cork board (still 100% pure cork). The rough slab is then subjected to a finishing process which cuts it to accurate size and sands its surfaces, completing the manufacture of commercial corkboard insulation.

ESSENTIALS OF GOOD INSULATION

The essentials of good insulation are low thermal conductivity; fire retardance; permanence; non-absorbence; sanitation; economy. Mundet "Jointite" Corkboard incorporates all these qualities.

Mundet Corkboard meets the U. S. Government Master Specification requirements in every respect. Its heat transmission is guaranteed not to exceed .30 B.t.u. per square foot per inch thickness per degree difference in temperature per hour when tested under Bureau of Standards conditions and methods. In actual cold storage practice the insulation value may be taken as about ten per cent better than the guaranteed figure.

CONDUCTIVITY CHART FOR CORKBOARD INSULATION

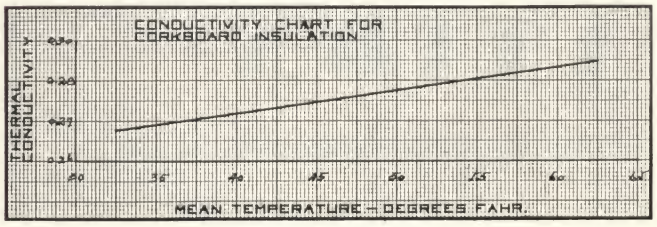


TABLE OF THICKNESSES RECOMMENDED TO BE USED FOR COLD STORAGE WORK AS INSULATION FOR VARIOUS TEMPERATURES

Range of temperature	Walls, in.	Ceilings, in.	Floor on ground, in.	Floor above ground, in.	Roofs, in.
Below 0° F.	8	8	7	8	9
0° to 10° F.	7	7	6	7	8
10° to 20° F.	6	6	5	6	7
20° to 35° F.	5	5	4	5	6
35° to 50° F.	4	4	3	4	5
50° to 60° F.	3	3	2	3	4
Above 60° F.	2	2	0	2	2

Users of Mundet

BAKERIES

Gordon Baking Co.
Ward Baking Co.
Kroger Grocery & Baking Co.

CANDY FACTORIES

F. G. Shattuck Co. (Schrafft's), New York, N. Y.
Park & Tilford, New York, N. Y.
Planters Nut & Chocolate Co., Suffolk, Va.

OUR FACILITIES

The name of Mundet was first identified with cork products in the year 1865. Today the Company ranks among the leaders of the industry.

The Company maintains two plants for the exclusive manufacture of insulation products. One is located in Portugal and the other in New Jersey (about ten miles from New York City). These plants are of about the same capacity and can produce a total of 60,000,000 to 70,000,000 ft. board measure of insulation a year. "Jointite" products are stocked in many of the large centers of the world. The Portuguese plant is adjacent to the Port of Lisbon from which regular sailings are to be had to any part of the world. The New Jersey plant at all times carries large stocks of finished products, as do all of the Branch Offices located in the principal cities of the United States and Canada. The Company's shipping facilities are unsurpassed, either by rail or water.

SALES AND SERVICE

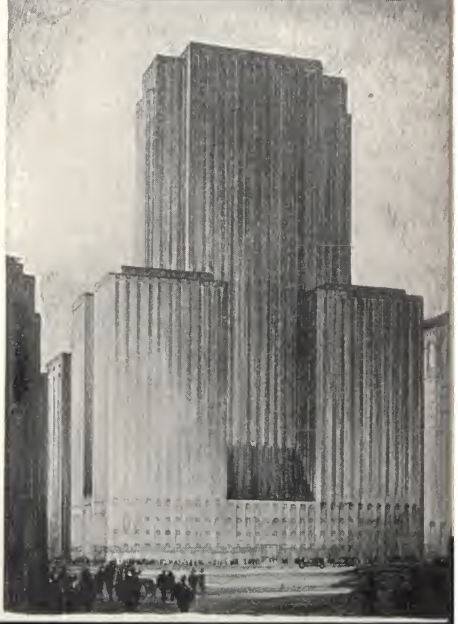
The Company maintains branches in the principal cities of the United States and Canada for the convenience of its clients. Our branch offices are in charge of competent engineers who will gladly co-operate and furnish information pertinent to insulation work.

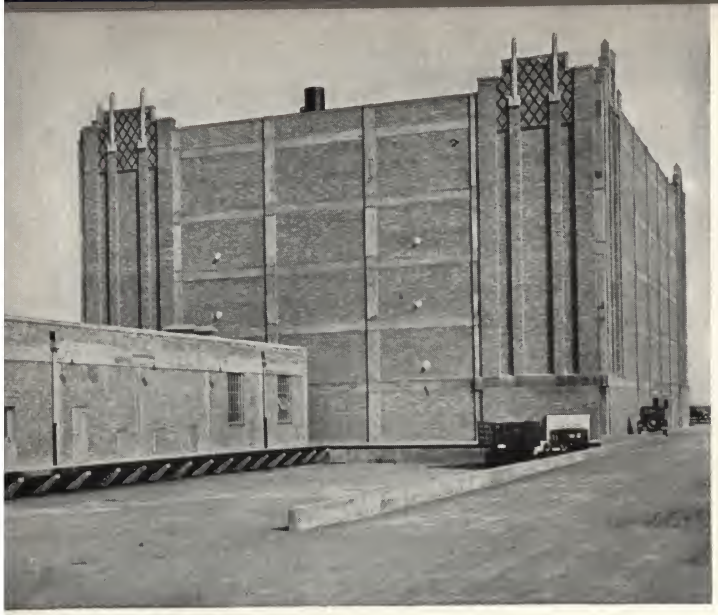
CONTRACTING

The Company maintains a well organized erecting force at each branch office fully capable of handling any erection contract involving its products. No contract is too small or too large.

GUARANTEE

The Company unqualifiedly guarantees that its material and workmanship are of the best and agrees to make good, without cost to the client, any defect that may be chargeable to inferior material or workmanship.





General *for Cold Storage Walls* . . .

Brick, Concrete, Hollow Tile,

Where First Course Is Erected in Cement Mortar

SPECIFICATION NO. 1 • • • The walls shall be insulated with .... in. of "Jointite" Corkboard, applied in two courses of .... in. each. The first course of corkboard shall be erected against the walls in a ½-in. bed of portland cement mortar.

Note (1): If walls are of concrete, specify that they shall be thoroughly hacked in order to provide a good bond.

The second course of corkboard shall then be applied against the first course in a heavy dip coat of hot asphalt and additionally secured to the first course with hard wood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces shall be finished with a ½-in. plaster finish applied in two coats; the first coat to be a rough or scratch coat and the second coat to be brought to a float (or trowel) finish and marked off in squares of approximately 4 ft. in order to minimize and direct shrinkage cracks.

Note (2): If mastic finish is desired in place of plaster finish, omit the last paragraph above and substitute as follows:

The exposed cork surface shall be finished with a ⅛-in. cold mastic finish consisting of a brush or spray application of Mundet Asphalt Emulsion, followed by a trowel application of Mundet Asphalt Emulsion mixed with asbestos and clean screened sand in the following proportions, viz., 50 gal. emulsion to 100 lb. of asbestos floats to 4 cu. ft. of sand. (This finish is black in color and may be painted if desired.)

Where First Course Is Erected in Hot Asphalt

SPECIFICATION NO. 2 • • • The walls shall first be given a single coat of portland cement plaster left under the float.

Note (1): If walls are of concrete, specify that they shall be thoroughly hacked in order to provide a good bond.

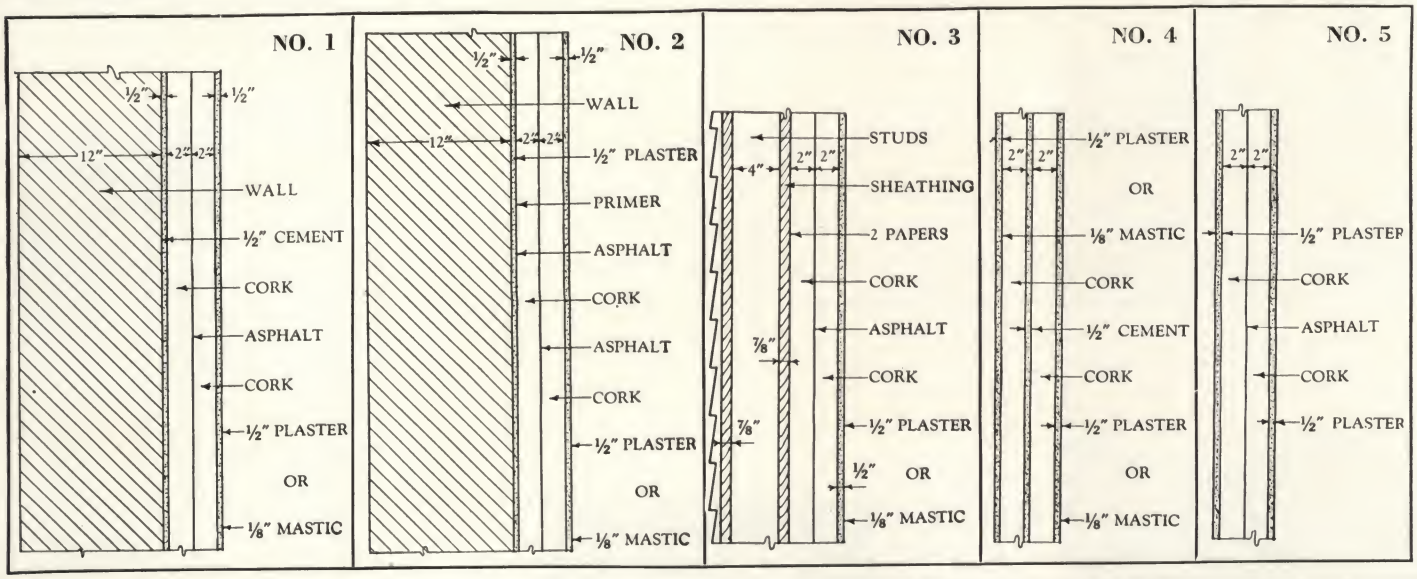
After the plaster coat has set, the walls shall be given two spray, or brush, coats of Mundet Asphalt Primer, following which the walls shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be applied against the walls in a dip coat of hot asphalt. The second course and the finish shall be as stipulated in Specification No. 1.

Wood Frame Walls

SPECIFICATION NO. 3 • • • Two courses of waterproof insulation paper shall be securely tacked against the sheathed surfaces, after which the walls shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be nailed dry to the wall with the galvanized wire nails made especially for this type of work. The second course of corkboard shall be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured with hard wood skewers of suitable length. All joints shall be broken with respect to adjacent layers and to the preceding course. The finish shall be as provided in Specification No. 1.

Cork Partitions—Cement Mortar

SPECIFICATION NO. 4 • • • The partitions shall be of the solid cork and cement self-sustaining type, and shall be fabricated of two courses of .... in. "Jointite" Corkboard. The first course of corkboard shall be erected against temporary studding and the second course shall be erected against the first in a ½-in. bed of portland cement mortar, and



CLUBS

Chicago Womans Club, Chicago, Ill.
Engineers Club, Boston, Mass.
Union League Club, New York, N. Y.

COLD STORAGE WAREHOUSES

Merchants Refrigerating Co., Jersey City, N. J.
Great Atlantic & Pacific Tea Co., Various Locations
Manhattan Refrigerating Co., New York, N. Y.

Specifications Insulation . . . . . Floors

Wood Frame • Cork Partitions

additionally secured with hardwood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed surfaces shall be finished as provided in Specification No. 1.

Cork Partitions—Hot Asphalt

SPECIFICATION NO. 5 • • • The partitions shall be of the solid cork and cement self-sustaining type, and shall be fabricated of two courses of .... in. "Jointite" Corkboard. The first course of corkboard shall be erected against temporary studding and the second course shall be erected against the first in a dip coat of hot asphalt, and additionally secured with hard wood skewers of suitable length.

All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces shall be finished with ½ in. of portland cement plaster mixed 1:2, applied in two coats; the first coat to be a rough or scratch coat and the second coat to be brought to a float (or trowel) finish and marked off in squares of approximately 4 ft. in order to minimize and direct shrinkage cracks.

Concrete Floors, Concrete Base

SPECIFICATION NO. 6 • • • The floor shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course shall be laid down in a heavy mop coat of hot asphalt and the second course shall be laid upon the first in like manner, with all joints broken relative to the first course. The exposed top of the corkboard shall then receive a heavy mop coat of hot asphalt which shall thoroughly seal all joints.

A concrete wearing floor .... in. thick shall be laid upon the corkboard. The first .... in. shall be gravel or rock concrete mixed . . : . . : . . followed by a 1-in. cement top mixed 1:2 and floated and troweled to a smooth and even finish. The floor shall be pitched to floor drains.

Wood Floors, Concrete Base

SPECIFICATION NO. 7 • • • The floors shall be insulated with .... in. of "Jointite" Corkboard in two layers as provided in Specification No. 6.

Over the first course of corkboard there shall be laid ....x4-in. wood sleepers on 28-in. centers, all securely mopped in.

The exposed cork surface shall then receive a heavy mop coat of hot asphalt which shall thoroughly seal all joints.

A wearing floor of 2x.... in. long leaf yellow pine shall then be applied, securely nailed to the sleepers provided in the top layer of corkboard.

Mastic Floors, Concrete Base

SPECIFICATION NO. 8 • • • The floor insulation shall be laid as in Specification No. 6.

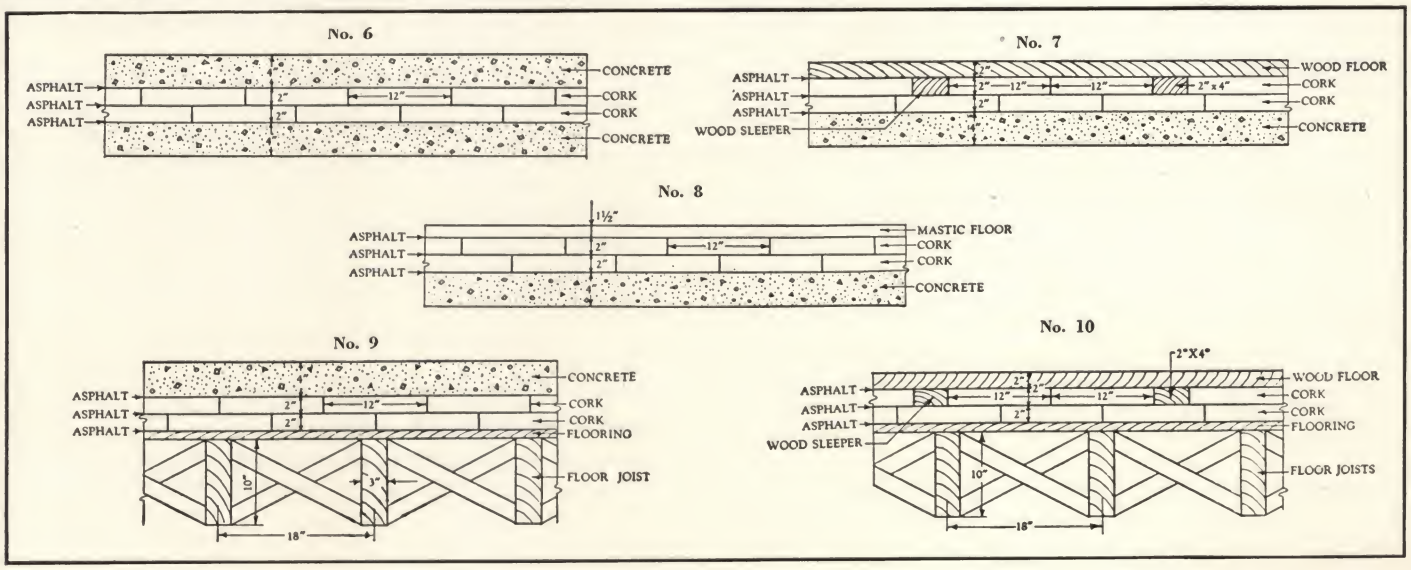
The finish floor shall consist of a 2-in. mastic wearing surface applied in two courses.

Concrete Floors, Wood Base

SPECIFICATION NO. 9 • • • The floor shall be insulated as in Specification No. 6.

Wood Floors, Wood Base

SPECIFICATION NO. 10 • • • The floors shall be insulated as in Specification No. 7.



COLLEGES

Yale University, New Haven, Conn.
Harvard University, Boston, Mass.
University of Pennsylvania, Philadelphia, Pa.

DAIRIES

Borden Farms Products Co., Various Locations
Sheffield Farms Co., Various Locations
Beatrice Creameries, Detroit, Mich.

Users of Mundet

General Insulation

Ceilings • •

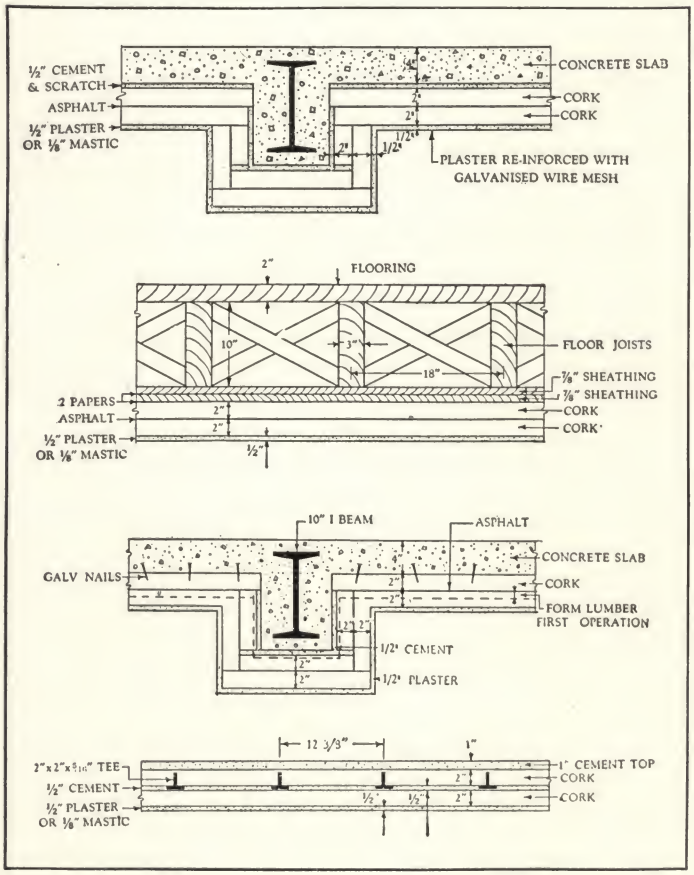
Concrete

SPECIFICATION NO. 11 • • • The ceiling shall be insulated with ... in. of "Jointite" Corkboard applied in two courses. The ceiling areas shall first be thoroughly hacked and pitted and shall then receive a tight scratch coat of portland cement mortar.

The first course of corkboard shall then be applied in a ½-in. bed of portland cement mortar and securely propped in place until the cement has set. The second course of corkboard shall then be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured with hardwood skewers of suitable length. All joints shall be broken relative to adjacent layers and to the preceding course.

The exposed cork surfaces shall be finished as provided in Specification No. 1.

Note: If plaster finish is desired it is recommended that No. 19-gauge galvanized wire mesh having two meshes to the inch be securely stapled to the cork surfaces before plaster finish is applied.



Alternate

The ceiling shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The ceiling areas shall be stripped with 2x4-in. treated lumber spaced 12 in. or 18 in. or 24 in. apart and fastened to ceiling with galvanized expansion bolts not more than 5 ft. 0 in. on centers. The entire ceiling area shall then be given a spray coat of Mundet Asphalt Primer, following which the first course of corkboard shall be applied in a heavy dip coat of hot asphalt and securely toe nailed to 2x4-in. strips. Second course application same as specified in base specifications.

Ceilings, Wood

SPECIFICATION NO. 12 • • • The ceiling shall be insulated with .... in. of "Jointite" Corkboard in two courses over wood sheathing.

Two layers of ⅞-in. tongued and grooved sheathing shall be installed on the underside of ceiling joists with two layers of waterproof insulation paper between the sheathing courses, and two layers of waterproof insulation paper securely tacked to the underside of the sheathing. On the ceiling surface thus prepared shall be erected the first layer of corkboard, nailing each piece securely in place. The second course of corkboard shall then be applied against first course in a dip coat of hot asphalt and finished as provided in Specification No. 1.

Ceilings (New Buildings) Concrete

SPECIFICATION NO. 13 • • • The ceilings shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The general contractor will lower the forms

FISH STORAGE WAREHOUSES

N. J. Ice & Cold Storage Co., Beach Haven Crest, N. J.
Bay State Fishing Co., Boston, Mass.
General Seafoods Co., Various Locations

FUR STORAGES

Revillon Freres, New York, N. Y.
L. Bamberger & Co., Newark, N. J.

SPECIFICATIONS (Cont'd)

• • Roofs

of the slab construction a distance sufficient to allow the first course of corkboard to be laid dry in the forms. There shall be at least six special galvanized nails placed in each sheet of corkboard laid in forms with the heads protruding not less than 1½ in., to act as a key in the concrete. After the forms are stripped the second course of corkboard and both courses of corkboard on the beams and girders shall be applied and finished as in Specification No. 11.

Ceilings, False T Iron

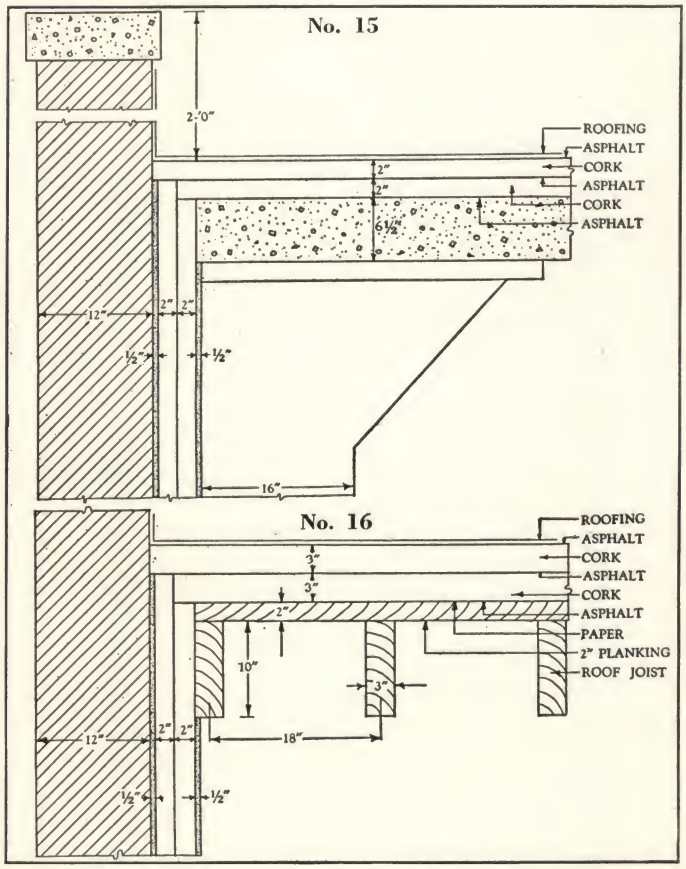
SPECIFICATION NO. 14 • • • The ceilings shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. A framework consisting of 2x2x.. in. tee irons spaced on 12½-in. centers, shall be erected upon 2x2-in. wood framing concealed in the cork wall insulation. The first course of corkboard shall be placed between the tee irons after all edges have been dipped in hot asphalt. The second course of corkboard shall be applied against the underside of the first course in a ½-in. bed of portland cement mortar, and additionally secured with hardwood skewers of suitable length. All joints in the second course shall be broken relative to adjacent layers and to the first course. The top exposed surface of the corkboard shall be finished with 1 in. of portland cement plaster left under the float. The underside of the insulation shall be finished as provided in Specification No. 1.

Concrete

SPECIFICATION NO. 15 • • • The roof slab shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. The first course of corkboard shall be laid down on the concrete slab in a heavy mop coat of hot asphalt, and against it a second course of corkboard shall be applied in like manner. All joints shall be broken relative to adjacent layers and to the preceding course. The exposed cork surfaces are to remain uncoated and left ready for the roofing contractor to lay his roofing. The cork contractor and the roofing contractor shall co-operate with each other in order that all insulation laid in any one day will be protected with at least two-ply roofing.

Wood

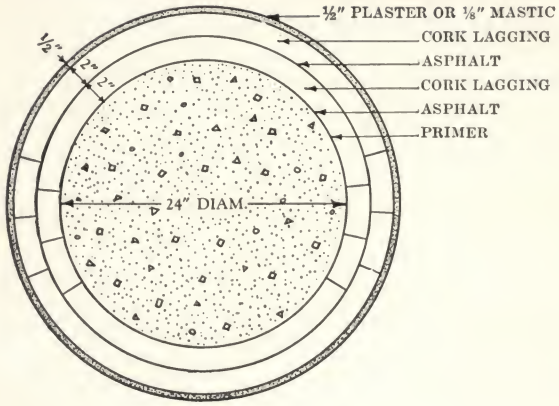
SPECIFICATION NO. 16 • • • The roof shall be insulated with .... in. of "Jointite" Corkboard applied in two courses. Over the roof planking shall be laid one course of waterproof insulation paper with the seams lapped at least 3 in. and mopped in with hot asphalt. The cork insulation shall then be applied as in Specification No. 15.



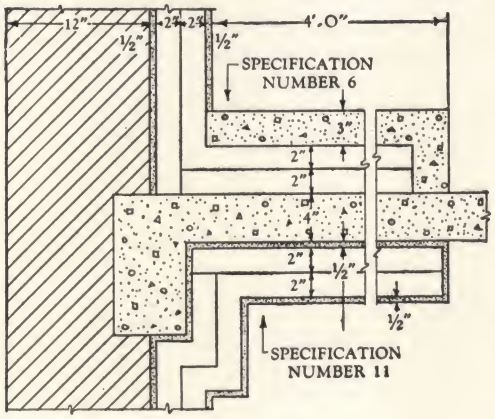
Column Insulation

SPECIFICATION NO. 17 • • •

The circular columns shall be insulated with ..... in. of "Jointite" Corkboard bevelled lagging, applied in two courses. The column surfaces shall receive a single coat of Mundet Primer, after which the first course of lagging shall be applied in a dip coat of hot asphalt. Each lag shall be securely locked to the adjacent lags with hard wood skewers of suitable length. The second course of lagging shall then be applied against the first course in a heavy dip coat of hot asphalt, and additionally secured to the first course with hard wood skewers of suitable length. The exposed cork surfaces shall be finished as in Specification No. 1.

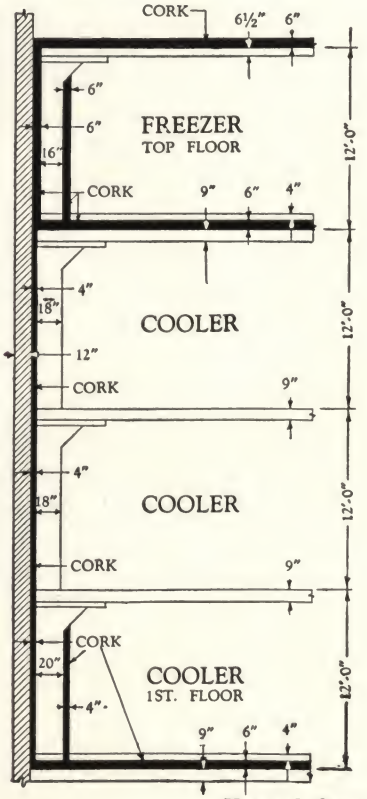


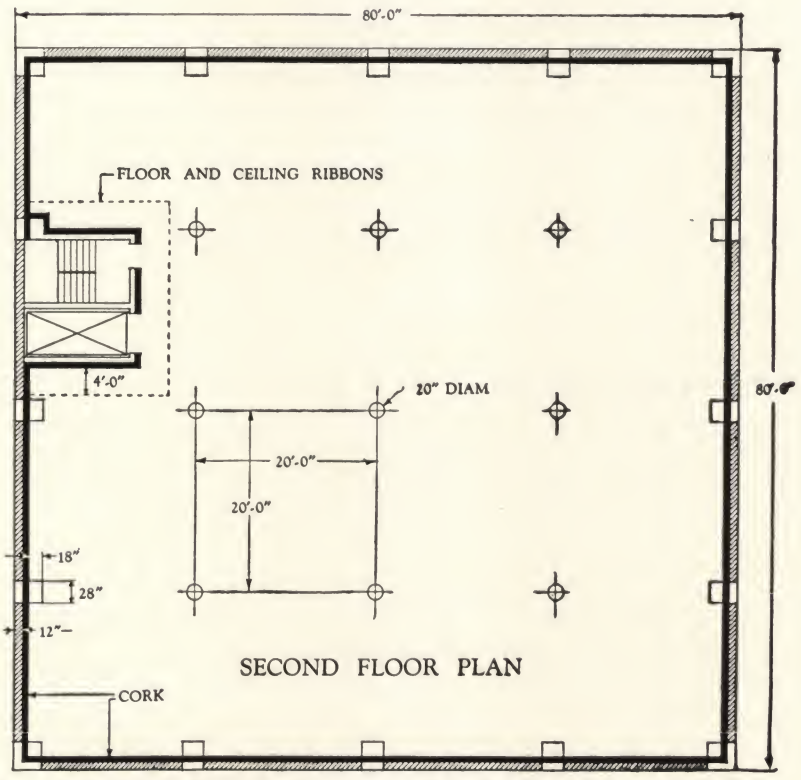
LAP OR RIBBON INSULATION



Used where continuous insulation is not obtainable.

Ribbon insulation is the form shown on the accompanying sketch. It consists of insulation either on floor or ceiling which extends out to a limited distance only from the wall line. It is used where conditions make it impossible to provide continuous insulation. The ribbon insulation must be carried around beams and girders. For specifications, see notes on cut.





Typical Section and Plan of Building Showing Continuous Installation

Users of Mundet

[8]

HOTELS

Hotel Park Central, New York, N. Y.
Hotel St. George, Brooklyn, N. Y.
Hotel Majestic, Philadelphia, Pa.
Bryn Mawr Beach Hotel, Chicago, Ill.
Kenmore Hotel, Boston, Mass.
Jung Hotel, New Orleans, La.

Coil Bunker Construction

SPECIFICATION NO. 18 • • •

A coil loft or bunker shall be constructed, supported on ...x... in. timbers spaced 20 in. apart (Item 1), which shall be suitably supported in walls.

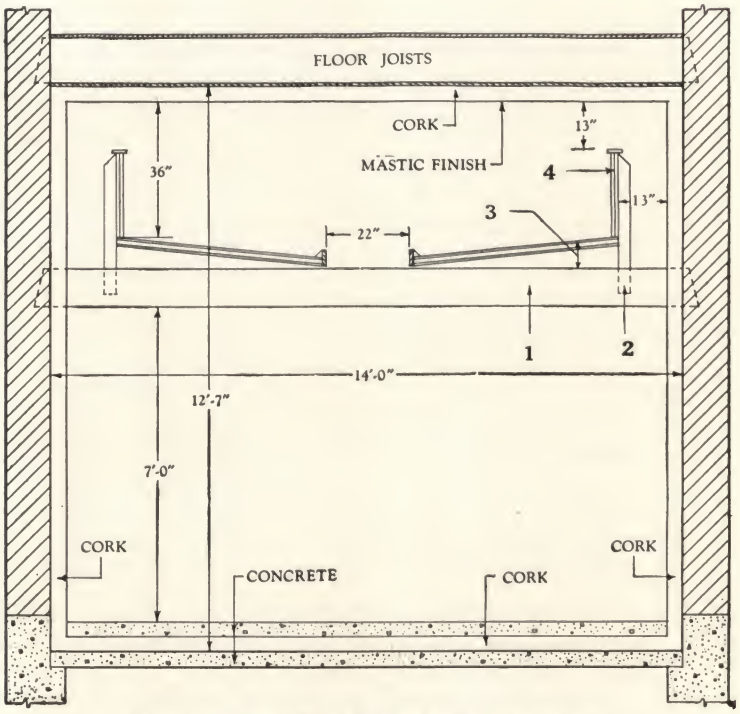
Wood cleats 2x4 in. (Item 2), shall then be securely bolted to the sides of the timbers and will act as supports for the warm air baffles (Item 4).

The top of the timbers shall then be given the correct slope by nailing tapered strips, which shall be the width of the timber and shall vary from 3 in. high at the outside end to 1 in. at the inside. These tapered strips shall then be sheathed with 7/8-in. tongued and grooved sheathing of spruce or cypress, over which shall be laid two courses of waterproof insulation paper, followed by a single course of 2-in. corkboard, laid down in and coated with hot asphalt.

In the corkboard shall be buried 2x2-in. wood sleepers on 26-in. centers, which will act as nailing strips for the 7/8-in. tongued and grooved sheathing which shall be placed over the corkboard together with two layers of waterproof insulation paper, all securely nailed to the sleepers (Item 3). The top surface of bunker floor shall then be covered with No. 24-gauge galvanized iron (or copper) lining flashed up on the warm air baffles a distance of 12 in., and provided at the low point with a scupper for drainage connection. The baffles shall be constructed of two courses of 7/8-in. tongued and grooved sheathing with two layers of waterproof insulation paper between them, all securely nailed to the wooden cleats mentioned above (Item 4).

The edges of the cold air duct shall be formed with 2x8-in. timbers securely fastened to the bunker timbers. The metal lining of the bunker shall extend over these timbers and shall be lapped vertically downward at least 2 in.

Note: For rooms having less than 8 ft. inside clear width, it is customary to use a single bunker pan. In rooms of greater than 8-ft. width the double bunker pan illustrated should be used. It is customary to make the total duct widths equal to about 30% of total width of room.



Section Showing Coil Bunker Construction

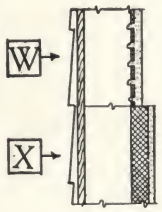
Typical Construction Details

Below are illustrated certain commonly used building sections, with and without insulation, together with tables showing the heat transmission through them expressed in B.t.u. per hour, per square foot, per degree difference in temperature. The figures given for uninsulated construction have been taken from information contained in the 1930 Guide of the American Society of Heating and Ventilating Engineers. Savings in heat loss by the use of Mundet "Jointite" Corkboard are apparent.

The cuts are representative of methods of construction in common use and the data given will apply regardless of size or class of work. Should there be a type not illustrated upon which information is desired, a communication addressed to any of our offices will receive immediate attention and the specific information will be furnished.

On thickness of cork insulation greater than 3 in., figures are based on two-layer construction, using hot asphalt between the layers of cork.

SPECIFICATIONS



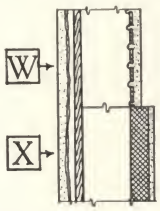
"W" beveled siding, waterproof paper, sheathing, studding, lath and plaster.

"X" beveled siding, waterproof paper, sheathing, studding, corkboard, plaster.

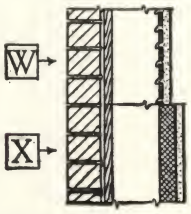
Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.275	.117	.098	.073	.058	.040

"W" stucco on metal lath, furring, waterproof paper, sheathing, studding, lath and plaster.

"X" stucco on metal lath, furring, waterproof paper, sheathing, studding, corkboard, plaster.



Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.319	.125	.102	.076	.059	.041



"W" brick veneer, waterproof paper, sheathing, studding, lath and plaster.

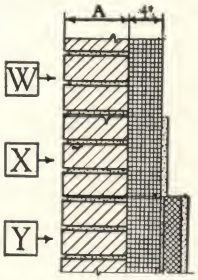
"X" brick veneer, waterproof insulation paper, sheathing, studding, corkboard, plaster.

Not insulated, W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.258	.114	.095	.072	.057	.040

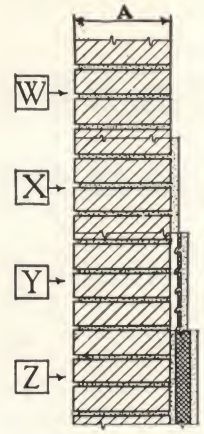
"W" brick, tile.

"X" brick, tile, plaster.

"Y" brick, tile, portland cement backing, corkboard, plaster.



Thickness, A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
8	.257	.243	.110	.093	.071	.054	.039
12	.205	.197	.101	.086	.067	.052	.039
16	.196	.185	.098	.084	.066	.051	.038



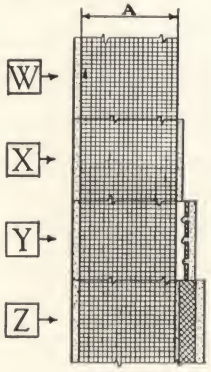
"W" 4-in. face brick and common brick.

"X" brick, plaster.

"Y" brick, furring, lath and plaster.

"Z" brick, portland cement mortar backing, corkboard, plaster.

Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
8	.385	.356	.261	.127	.106	.078	.059	.042
12	.295	.277	.216	.115	.098	.074	.056	.040
16	.238	.227	.184	.104	.090	.069	.053	.039
20	.190	.176	.153	.097	.081	.064	.050	.037
24	.162	.148	.126	.089	.074	.059	.047	.035



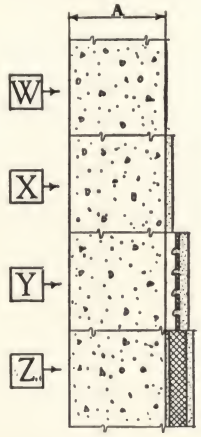
"W" stucco, hollow tile.

"X" stucco, hollow tile, plaster.

"Y" stucco, hollow tile, furring, lath and plaster.

"Z" stucco, hollow tile, portland cement backing, corkboard, plaster.

Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
4	.515	.463	.411	.142	.113	.082	.061	.043
6	.419	.384	.346	.134	.107	.080	.059	.042
8	.317	.296	.228	.119	.099	.074	.057	.041
10	.304	.285	.221	.117	.093	.073	.058	.040
12	.241	.229	.186	.106	.090	.069	.053	.039



"W" concrete—1 : 3 : 5 mix.

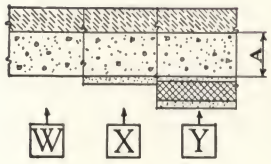
"X" concrete, plaster.

"Y" concrete, furring, lath and plaster.

"Z" concrete, portland cement mortar backing, corkboard, plaster.

Thickness A, in.	Not insulated			Z, insulated with corkboard, in.				
	W	X	Y	1½	2	3	4	6
4	.641	.573	.367	.150	.120	.085	.062	.044
6	.583	.518	.339	.142	.116	.084	.062	.043
8	.512	.461	.314	.138	.113	.082	.061	.043
10	.455	.416	.292	.134	.110	.081	.060	.042
12	.411	.378	.273	.131	.106	.079	.059	.042
16	.343	.320	.241	.122	.102	.076	.057	.041
18	.319	.299	.228	.120	.099	.075	.057	.041
20	.294	.277	.216	.116	.097	.073	.056	.040

SPECIFICATIONS

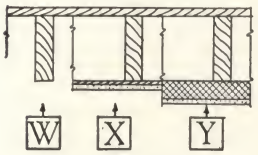


"W" finished (2-in.) concrete floor, reinforced concrete slab.

"X" finished floor, reinforced concrete slab, plaster finish.

"Y" finished concrete floor, reinforced concrete slab, portland cement mortar backing, corkboard, plaster.

Thickness A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
4	.461	.419	.135	.110	.081	.060	.042
5	.438	.400	.133	.109	.081	.060	.042
6	.417	.380	.131	.107	.080	.059	.042
7	.392	.363	.129	.106	.079	.059	.042
8	.378	.348	.127	.105	.079	.059	.042
10	.345	.322	.123	.103	.077	.058	.041



"W" single wood floor joists.

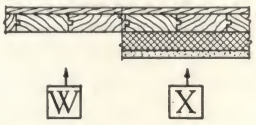
"X" single wood floor joists, lath and plaster.

"Y" single wood floor, corkboard, plaster.

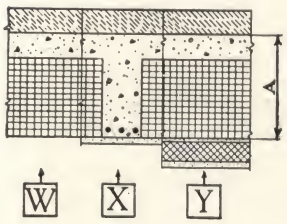
Not insulated		Y, insulated with corkboard, in.				
W	X	1½	2	3	4	6
.440	.272	.119	.100	.075	.057	.041

"W" finished wood floor (1 in.), mill constructed plank floor.

"X" finished wood floor, mill constructed plank floor, corkboard, plaster.



Not insulated W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.233	.108	.092	.070	.053	.039



"W" finished (2-in.) concrete floor, reinforced concrete joist and tile slab.

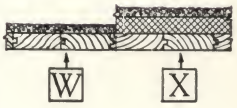
"X" finished floor, reinforced concrete joist and tile slab, plaster.

"Y" finished floor, reinforced concrete joist and tile slab, portland cement mortar backing, corkboard, plaster.

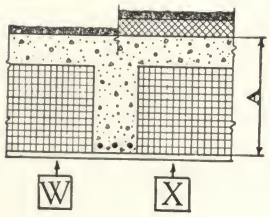
Thickness A, in.	Not insulated		Y, insulated with corkboard, in.				
	W	X	1½	2	3	4	6
5½	.621	.550	.150	.119	.085	.062	.043
8	.430	.359	.135	.111	.084	.062	.043
10½	.392	.321	.132	.106	.081	.060	.042
13	.370	.299	.129	.104	.079	.059	.042
15½	.271	.200	.114	.096	.074	.057	.041

"W" standard built-up roofing, mill construction plank roof.

"X" standard built-up roofing, corkboard, mill construction plank roof.



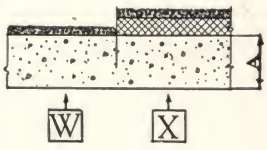
Not insulated W	X, insulated with corkboard, in.				
	1½	2	3	4	6
.345	.126	.104	.077	.058	.041



"W" standard built-up roofing, reinforced concrete joists and tile slab, plaster.

"X" standard built-up roofing, corkboard, reinforced concrete joists and tile slab, plaster.

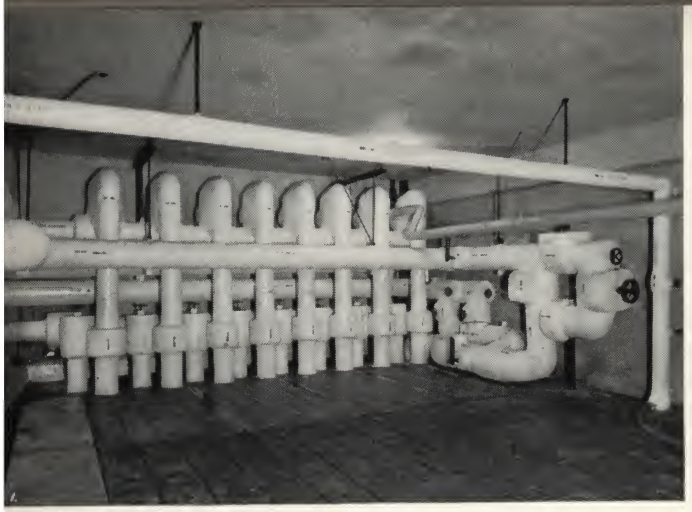
Thickness A, in.	Not insulated W	X, insulated with corkboard, in.				
		1½	2	3	4	6
5½	.515	.143	.116	.084	.062	.043
8	.456	.138	.113	.082	.061	.043
10½	.410	.133	.110	.081	.060	.042
13	.381	.130	.107	.080	.059	.042



"W" standard built-up roofing, reinforced concrete slab.

"X" standard built-up roofing, corkboard, reinforced concrete slab.

Thickness A, in.	Not insulated, W	X, insulated with corkboard, in.				
		1½	2	3	4	6
2	.658	.153	.122	.087	.063	.044
3	.610	.151	.120	.086	.063	.044
4	.568	.148	.119	.085	.062	.044
5	.532	.145	.117	.084	.062	.043
6	.500	.143	.115	.083	.061	.043
7	.472	.140	.113	.082	.061	.043
8	.447	.138	.112	.082	.060	.043



"Jointite" Moulded Cork Pipe Covering

All the insulating qualities of cork hereinbefore explained for cold storage, and its resistance to heat transmission generally, apply equally to its value as insulation for cold piping. It affords a most efficient and permanent means for protecting cold water, brine, and ammonia pipe lines and fittings.

"Jointite" Moulded Cork Pipe Covering is made of pure granulated cork compressed and moulded in forms and baked as described for corkboard. Following the baking process each piece of pipe covering is covered all over with a mineral rubber finish which prevents damage from moisture or frost.

Various moulded shapes are made both for pipe and fittings so that all parts of the pipe lines may be neatly and adequately covered.

Thickness		Clear space between pipes, in.	Clear space between pipes and walls, etc., in.
Brine	Screwed fittings under 6 in.	8	6
	Screwed fittings over 6 in. and flanged fittings	14	8
Special thick	Screwed fittings under 6 in.	10	8
	Screwed fittings over 6 in. and flanged fittings	18	12
Ice water thick	Screwed fittings under 6 in.	6	4
	Screwed fittings over 6 in. and flanged fittings	10	5

SPECIFICATIONS

Used for 75% of all Pipe Covering

SPECIFICATION A • • • **Pipe**—After the pipe lines have been tested and approved, they shall be insulated with "Jointite" [(1), (2) or (3)] Cork Pipe Covering. All contact joints shall be sealed with Mundet Waterproof Cement. All contact joints shall be butted closely and firmly together and secured with copper clad steel wire, spaced at intervals of not more than 6 in.

Fittings—The fittings shall be insulated with "Jointite" Moulded Cork Fitting Covers of a thickness to match the above pipe covering. All contact joints shall be sealed with Mundet Waterproof Cement. All joints shall be butted closely and firmly together and secured with not less than four copper clad steel wires. On all flanged fittings and on all screwed fittings larger than 6 in., not less than six wires shall be used.

Voids—All spaces between fittings and fitting covers shall be filled with Mundet Fitting Filler.

Seams—All seams and chipped edges in the fitting covers and pipe covering shall be filled with Mundet Seam Filler and the surface made smooth.

Finish—The entire outer surface of the insulation shall receive one coat of Mundet Finish Paint.

Hangers—Pipe Lines shall be supported, in every case, outside of the covering and shall be protected by carefully fitted metal shields extending 4 in. on each side of the hanger. The shield shall embrace the entire lower semicircle.

Spacing—Minimum spacing between pipes and adjacent surfaces shall be as given in the table at the top of this column.

Moist Air Conditions or Outdoor Use

SPECIFICATION B • • • **Pipe, Fittings, Voids, Seams**—*Note:* Specifications under these headings same as Specification A.

Roofing—After the seams have been filled, there shall be applied ... layers of ... ply smooth surfaced roofing. Each joint shall be lapped not less than 2 in. The laps shall be sealed with asphalt paint and secured with staples or copper clad steel wire. All laps shall be laid in such a manner as to form a watershed.

Finish, Hangers, Spacing—*Note:* Specifications under these headings same as Specification A.

Decorative Canvas or Paint Finish

SPECIFICATION C • • • **Pipe, Fittings, Voids, Seams**—*Note:* Specifications under these headings same as Specification A.

Canvas—After the seams have been filled, the pipe covering shall be wrapped with No. 8 Rosin Sized Paper, and the fittings shall be given a coat of asbestos cement, troweled on, and of sufficient thickness to give a smooth base for canvas. Over the pipe and fittings, a jacket of 8-oz. canvas shall be neatly sewn, using not less than three stitches to the inch. All seams shall be located along the line of minimum visibility.

Finish—The canvas jacket shall be sized and painted with two coats of lead and oil paint.

Hangers, Spacing—Specification under this heading, same as Specification A.

Low Temperature Piping

SPECIFICATION D • • • **Pipe, Fittings, Voids, Seams**—Specifications under these headings same as Specification A.

Membrane Jacket—Over the fittings there shall be applied a layer of mineral rubber cloth, lapped not less than 2 in. and sealed with asphalt paint. Starting with a 2-in. lap upon the fittings, the straight pipe shall be wrapped spirally with a layer of rubberized adhesive membrane tape lapped not less than 1 in.

Finish—Finish to be either as in Specification A or Specification C.

Hangers, Spacing—Specifications under this heading same as Specification A.

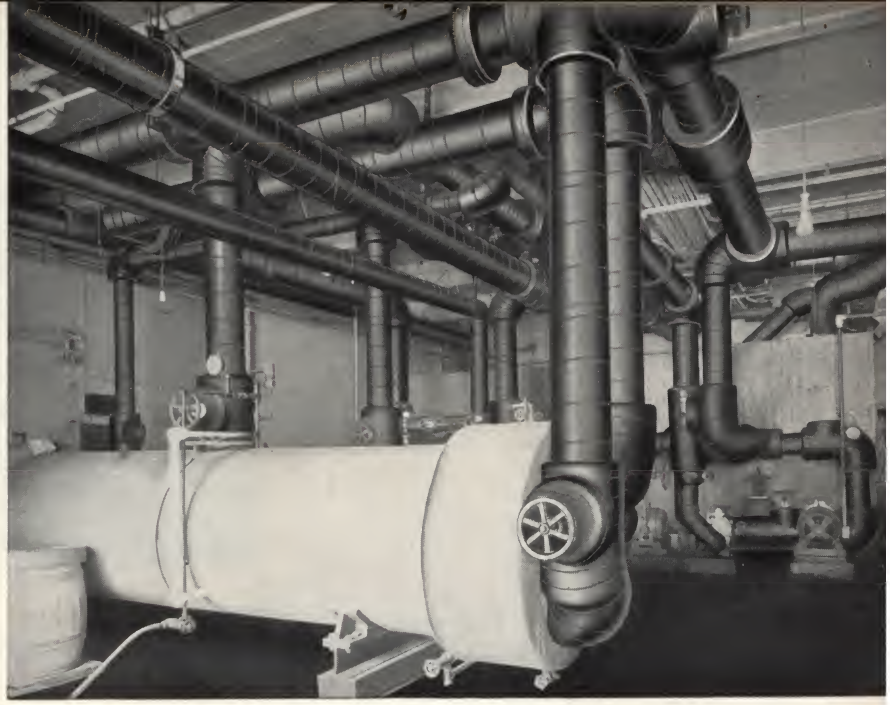
ICE PLANTS

Knickerbocker Ice Co., New York, N. Y.
Boston Ice Co., Boston, Mass.
City Ice & Fuel Co., St. Louis, Mo.

OFFICE BUILDINGS

New York Life Building, New York, N. Y.
Provident Mutual Life Ins. Building, Philadelphia, Pa.
Russ Building, San Francisco, Cal.

"Jointite" Cork Lagging



We manufacture beveled cork lagging and discs for the insulation of cylindrical tanks and coolers. The lagging is cut to order to any desired radius. If desired, the lagging can be furnished with a 1/8-in. mastic coating, ironed in at the factory. Shipment can be made within 24 hours after the order is received by our factory.

SUGGESTED THICKNESS

Note: The numbered items shown below are for covering of various standard thicknesses and for purposes as indicated. Reference will be made to this list in specification text.

2 in. of lagging (1) Above 40° F.
3 in. of lagging (2) Above 25° F. and below 40° F.
(3) Above 10° F. and below 25° F. 4 in. of lagging } Applied in
(4) Below 10° F. 6 in. of lagging } two courses

SPECIFICATIONS

SPECIFICATION E • • •

Note: This specification is usually used in conjunction with Specification A.

Lagging—***(1) Tank Surfaces***—After the cooler or tank has been tested and approved, the body of the tank shall be insulated with [see items (1), (2), (3) and (4)] ..... in. of "Jointite" Beveled Cork Lagging, applied in ..... courses. The first course shall be applied against the tank (with or without mineral rubber finish on the inside), with all contact joints firmly and securely butted together and sealed with Mundet Waterproof Cement. The lagging shall be further secured with copperclad steel wire spaced at intervals of not more than 6 in. (On tanks larger than 20" in diameter —outside measurement of cork—the lagging may be secured with No. 20-gauge galvanized spring steel bands 3/4" wide applied with special flush type clips on 9" centers). The second course of lagging shall then be applied against the first course in the same manner as above with all joints in the lagging broken with respect to the first.

(2) Flanges—The flanges shall be insulated in the same manner as the tank surfaces. The flange lagging shall lap upon the body lagging for 12 in. and shall project beyond the outermost portion of the head, a distance equal to the thickness of the tank insulation.

Discs—The heads shall be insulated with "Jointite" Corkboard Discs of the same total thickness as the tank insulation (with or without mineral rubber finish on the inside ironed on at the factory). The discs shall be applied directly against the head of the tank and supported by the flange lagging.

Voids—Any spaces between the lagging and the tank body shall be filled with Mundet Fitting Filler. The spaces between the bolts and flanges shall be filled with Mundet Fitting Filler. The spaces between the heads and the flanges shall be filled with fine regranulated cork.

Finish—The entire outer surface of the insulation shall have a mineral rubber finish ironed on at the factory. After the insulation is completed all seams and chipped edges shall be filled with Mundet Seam Filler.

Painting—The entire outer surface shall receive one coat of Mundet Finish Paint.

SPECIFICATION F • • •

Note: This specification is often used in conjunction with Specification C.

Lagging, Discs, Voids, Finish—*Note:* Specifications under these headings same as Specification E.

Canvas—After the seams have been filled, the outer surface of the tank shall be covered with a layer of No. 8 Rosin Sized Paper. Over the paper shall be sewn a jacket of 8-oz. canvas. All seams shall be of the invisible type and shall have not less than three stitches to the inch.

Painting—The canvas shall be sized and painted with two coats of lead and oil paint.

SPECIFICATION G • • •

Note: This specification is very commonly used where a neat appearance, plus the ability to withstand a certain amount of rough usage is desired.

Lagging, Discs, Voids, Finish—Specifications under these headings same as Specification E.

Plaster—After the seams have been filled, the outer surface of the insulation shall be covered with a layer of 1-in. hexagonal mesh galvanized wire, securely stapled to the insulation. Over the wire shall be applied two coats of portland and asbestos cement plaster. The first coat shall be a rough or scratch coat; the second coat shall be troweled to a smooth and even finish.

Painting—Optional.

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Roof Insulation

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To Prevent Condensation •

It is generally recognized today that correct building design must include insulation. The heat transmitted from uninsulated roofs in the winter results in a needless loss, the cost of which comes to a staggering total. Furthermore, the annoying and frequently expensive problem of ceiling condensation may be easily overcome.

In the summer, these same roofs absorb a tremendous amount of heat and deliver it to the rooms below, thus causing discomfort to, and impairing the efficiency of, people who are working in these areas. In certain commercial plants where the humidity and often the temperature must be governed at a high point, due to the processes of manufacture, an uninsulated roof will inevitably chill the air in its vicinity during the winter months to the point where some of its moisture condenses and forms what is commonly known as ceiling "sweat." The moisture drops to the floor, producing a most annoying condition to people who are working in the room and often causing damage to property, since it will drop upon any materials and machinery that may be underneath. The loss due to condensation must be considered separately from the direct loss due to heat leakage through the roof, the latter being present in all uninsulated construction while the former appears only when the humidity is relatively high or when the difference in temperature between the inside of the roof and the room is of considerable magnitude.

Numerous industries are in the position of, for example, textile mills, which have, as one of the prerequisites for proper manufacturing, a high degree of relative humidity. Many textile mills are located in New England, and in winter are operating with a great variation between the inside and outside temperatures of their buildings. Unless these buildings are insulated, the walls and roofs become very much colder, on the inside, than the surrounding air. This cold is transmitted to the adjacent air, which reaches the point of total saturation (dewpoint), and deposits its moisture upon the cold surfaces, from which come the drip. The resultant losses may be grouped as follows:

(1) Direct losses.
  (a) Heat transmitted through roof and walls.
  (b) Damage to goods in process of manufacture.
  (c) Decreased efficiency of labor.
(2) Indirect losses.
  (a) Damage to machinery.
  (b) Deterioration of buildings, particularly of wooden construction.
  (c) Lowered morale of labor due to unpleasant working conditions.

Unfortunately, it is only recently that industry has begun to subject its inherited losses to a careful scrutiny. In the past, ceiling condensation was regarded as a necessary evil, and an inevitable concomitant of high relative humidity. Advanced engineering practice in new buildings, however, has demonstrated its worth to the point where manufacturers have begun to realize that their old equipment cannot compete with new equipment unless it is brought up to date. However, the tendency to maintain a given status quo, plus the inhibition against spending money upon old equipment, has produced a considerable inertia. It is for this reason that all roofs are not insulated, although there have been instances without number where cork insulation has been installed in an existing plant and has paid for itself within a few years in the single item of coal required for heating.

When bringing to the attention of manufacturers the need for cork insulation in buildings, the greater stress has been laid upon the resultant saving in fuel. Today, however, industrial executives in ever increasing numbers are realizing that a most important factor in their problem of keeping costs at a minimum is the attitude of their labor. A worker is never efficient when he is uncomfortable, and therefore the use of insulation, while it may be considered as an intangible benefit from this angle, is nevertheless of vital import.

The other factors that go to make up the losses in uninsulated construction depend entirely upon individual conditions, and it is difficult to evaluate them in general terms, but it is reasonable to conclude that they are present in all cases to a greater or less degree and must eventually appear in the costs of manufacture.

Mention was made, in the foregoing text, of the losses caused by condensation in the textile industry; but it must not be assumed that this industry stands alone. Below are listed a number of types of buildings that are prone to condensation troubles.

Bakeries
Creameries
Laundries
Lumber drying rooms and kilns
Packing houses
Killing rooms
Paper mills
Power houses
Swimming pools
Textile mills—cotton, wool and silk
Tobacco factories
Turkish baths
Twine mills

Thickness of Corkboard Needed

It has already been shown that cork is the ideal insulation for this work. The next important thing to determine is the thickness of corkboard that must be used.

There is no rule of thumb by which it is possible to determine what thickness of cork insulation is required for any given roof. The thickness of insulation is an exact function of the humidity present, the nature of the wall or roof construction, its own co-efficient of heat transmission, and the maximum temperature difference on the two sides of the building construction. In order to facilitate the determination of the correct thickness of corkboard insulation for roofs, a special chart has been included in this section (see page 17) upon which it is possible to read directly the permissible heat loss for any given set of conditions. Upon page 16 will be found a table showing the heat loss of all common types of roof construction. Under each type is shown the heat loss of that construction with various thicknesses of "Jointite" Corkboard Insulation. Typical cases are also shown graphically in illustrations on page 11.

The easiest way of demonstrating the use of the chart, table and illustrations will be to show the working of an actual case. Following is a typical problem: A manufacturing plant is equipped with a 3-in. yellow pine roof and standard ⅝-in. built-up roofing. The inside temperature (dry bulb) at the ceiling is 70° F., the relative humidity is 80%, and the lowest temperature during the winter is minus 10° F.

Locate the line of 70° upon the room temperature scale at the top of the chart and follow down to the 80% relative humidity diagonal. Follow horizontally across the chart to the line of 80° maximum temperature difference on the lower scale. Interpolation between the bounding heat loss diagonal lines will show the heat loss to be .124. Referring to the heat transmission table, we find that in connection with a 3-in. yellow pine roof and ⅝-in. built-up roofing, 1½ in. of Mundet "Jointite" Corkboard will give sufficient insulation to preclude the possibility of condensation for the above set of conditions.

SPECIFICATIONS

Note: The following specifications will be found to cover the usual typical cases of roof insulation:

1

On Wood Deck Construction

On top of wood deck, first apply a single layer of .... roofing felt laid in hot asphalt with joints lapped 3 in. Following this lay one course of .... in. Mundet "Jointite" Corkboard, laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

2

Over Concrete Construction

On top of the concrete roof slab first apply two coats of asphalt primer, following which .... in. Mundet "Jointite" Corkboard is to be laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

3

Over Steel Roof Decks

On top of steel deck lay one course of .... in. Mundet "Jointite" Corkboard, laid in a heavy mop coat of hot asphalt, the exposed cork surfaces to be left dry, ready for the application of the roofing.

Note: Should roof insulation consist of two-layer work, the second course shall be applied on top of the first course in a dip coat of hot asphalt, with all transverse joints broken.

BREWERIES

P. Ballantine & Son, Newark, N. J.
F. & M. Schaefer Brewing Co., Brooklyn, N. Y.
Wm. Simons Brewing Co., Buffalo, N. Y.
Superior Brewing Co., Fort Worth, Texas
Jackson Brewing Co., New Orleans, La.
Globe Brewing Co., San Francisco, Cal.
Hyde Park Breweries Assoc., St. Louis, Mo.
Stroh Brewing Co., Detroit, Mich.

Users of Mundet

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Heat Transmission

TABLE SHOWING HEAT LOSSES THROUGH ROOFS

Construction	Transmission in B.t.u. per sq. ft. per degree difference in temperature per hour
2-in. concrete slab and roofing, no insulation	.658
2-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.206
2-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.153
2-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.122
2-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.087
2-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.067
3-in. concrete slab and roofing, no insulation	.610
3-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.201
3-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.151
3-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.120
3-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.086
3-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.067
4-in. concrete slab and roofing, no insulation	.568
4-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.197
4-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.148
4-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.118
4-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.085
4-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.066
6-in. concrete slab and roofing, no insulation	.500
6-in. concrete slab and roofing, 1 -in. Jointite Corkboard	.187
6-in. concrete slab and roofing, 1½-in. Jointite Corkboard	.143
6-in. concrete slab and roofing, 2 -in. Jointite Corkboard	.115
6-in. concrete slab and roofing, 3 -in. Jointite Corkboard	.083
6-in. concrete slab and roofing, 4 -in. Jointite Corkboard	.065
2-in. Yellow Pine and roofing, no insulation	.345*
2-in. Yellow Pine and roofing, 1 -in. Jointite Corkboard	.160
2-in. Yellow Pine and roofing, 1½-in. Jointite Corkboard	.127
2-in. Yellow Pine and roofing, 2 -in. Jointite Corkboard	.105
2-in. Yellow Pine and roofing, 3 -in. Jointite Corkboard	.078
2-in. Yellow Pine and roofing, 4 -in. Jointite Corkboard	.062
3-in. Yellow Pine and roofing, no insulation	.256*
3-in. Yellow Pine and roofing, 1 -in. Jointite Corkboard	.138
3-in. Yellow Pine and roofing, 1½-in. Jointite Corkboard	.112
3-in. Yellow Pine and roofing, 2 -in. Jointite Corkboard	.095
3-in. Yellow Pine and roofing, 3 -in. Jointite Corkboard	.072
3-in. Yellow Pine and roofing, 4 -in. Jointite Corkboard	.058
Sheet steel deck, no insulation	1.000†
Sheet steel deck and roofing, 1 -in. Jointite Corkboard	.231
Sheet steel deck and roofing, 1½-in. Jointite Corkboard	.167
Sheet steel deck and roofing, 2 -in. Jointite Corkboard	.130
Sheet steel deck and roofing, 3 -in. Jointite Corkboard	.091
Sheet steel deck and roofing, 4 -in. Jointite Corkboard	.067
4-in. hollow tile, ⅝-in. roofing, no insulation	.485‡
4-in. hollow tile, ⅝-in. roofing, 1 -in. Jointite Corkboard	.187
4-in. hollow tile, ⅝-in. roofing, 1½-in. Jointite Corkboard	.142
4-in. hollow tile, ⅝-in. roofing, 2 -in. Jointite Corkboard	.114
4-in. hollow tile, ⅝-in. roofing, 3 -in. Jointite Corkboard	.083
4-in. hollow tile, ⅝-in. roofing, 4 -in. Jointite Corkboard	.065
6-in. hollow tile, ⅝-in. roofing, no insulation	.398‡
6-in. hollow tile, ⅝-in. roofing, 1 -in. Jointite Corkboard	.171
6-in. hollow tile, ⅝-in. roofing, 1½-in. Jointite Corkboard	.133
6-in. hollow tile, ⅝-in. roofing, 2 -in. Jointite Corkboard	.109
6-in. hollow tile, ⅝-in. roofing, 3 -in. Jointite Corkboard	.080
6-in. hollow tile, ⅝-in. roofing, 4 -in. Jointite Corkboard	.063

*On yellow pine, nominal thickness specified, actual thickness used in tests.
†Factor as furnished by the Truscon Steel Co.
‡½-in. plaster on underside and 2-in. concrete roof slab over tile is assumed.

USE OF CHART

Locate the room temperature on Room Temperature Scale at top of chart and follow down on the corresponding line to its intersection with the line which represents the required humidity percentage, finding this point by interpolating, if necessary, on that segment of the vertical line between the diagonal lines, to obtain any required intermediate percentage between those shown in the left-hand column. For the sake of explanation the horizontal line so found will be referred to as the "humidity horizontal" for any particular case in point.

Next, determine the point of maximum difference in temperature on the scale at the bottom of the chart and follow up on the corresponding vertical line until it intersects the "humidity horizontal" and consider the point of intersection as point "A." Note where point "A" lies between two of the diagonal lines which represent amount of heat loss, and by interpolation between these light lines determine its value as compared to the figures in the right-hand column. The value so found will be the maximum allowable heat loss.

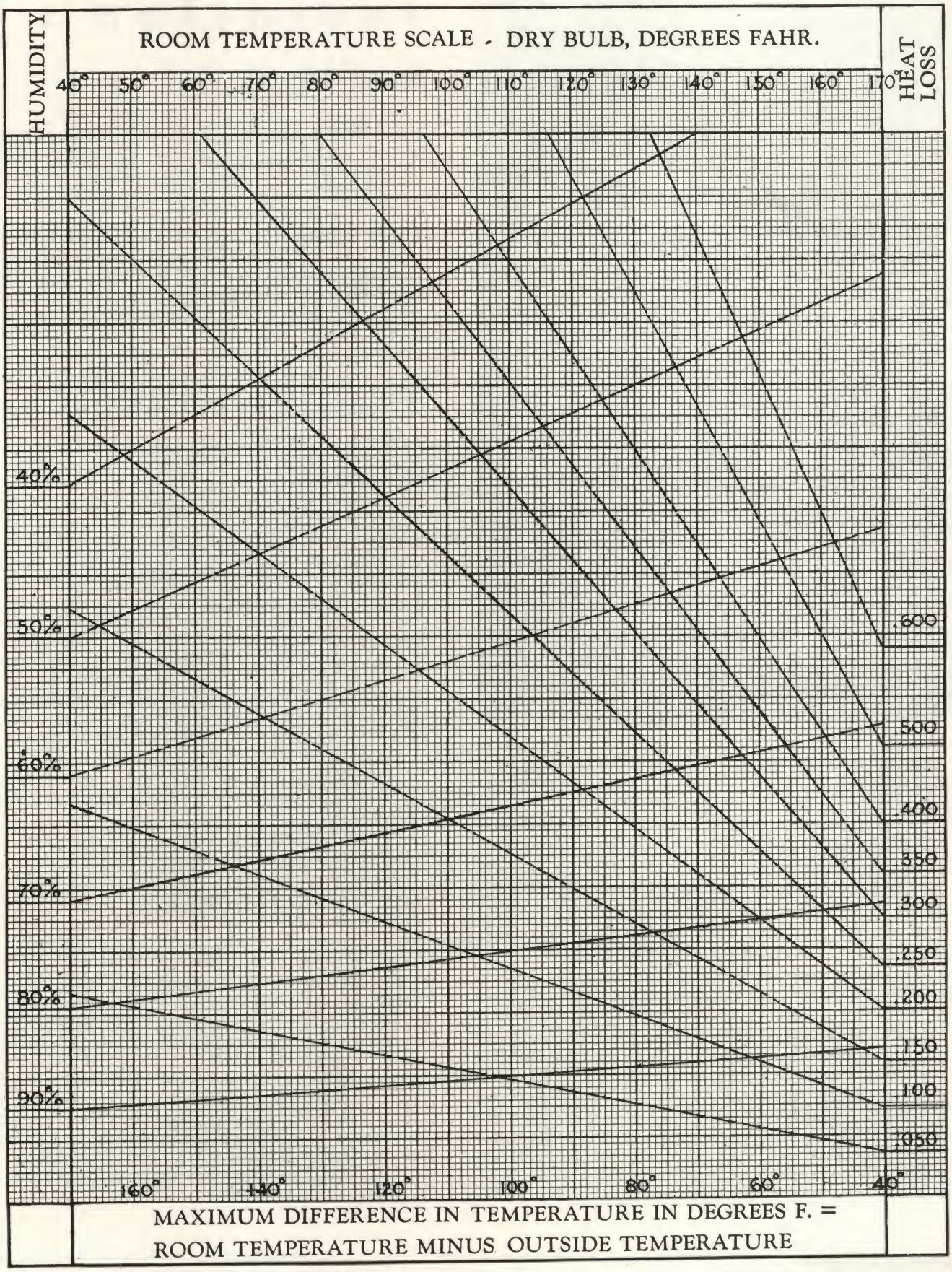
Determine from the Table of Heat Loss the thickness of insulation which will show a heat loss less than the value of "A" using the section of the table which shows the proposed type of construction combined with the insulation.

See also typical construction details showing heat loss tabulation.

Mundet Acoustical Corkboard performs a dual function in this church. In addition to furnishing necessary acoustical correction it insulates the ceiling

HEAT LOSS CHART

For Determining the Maximum Allowable Heat Loss in Roofs to Prevent Condensation



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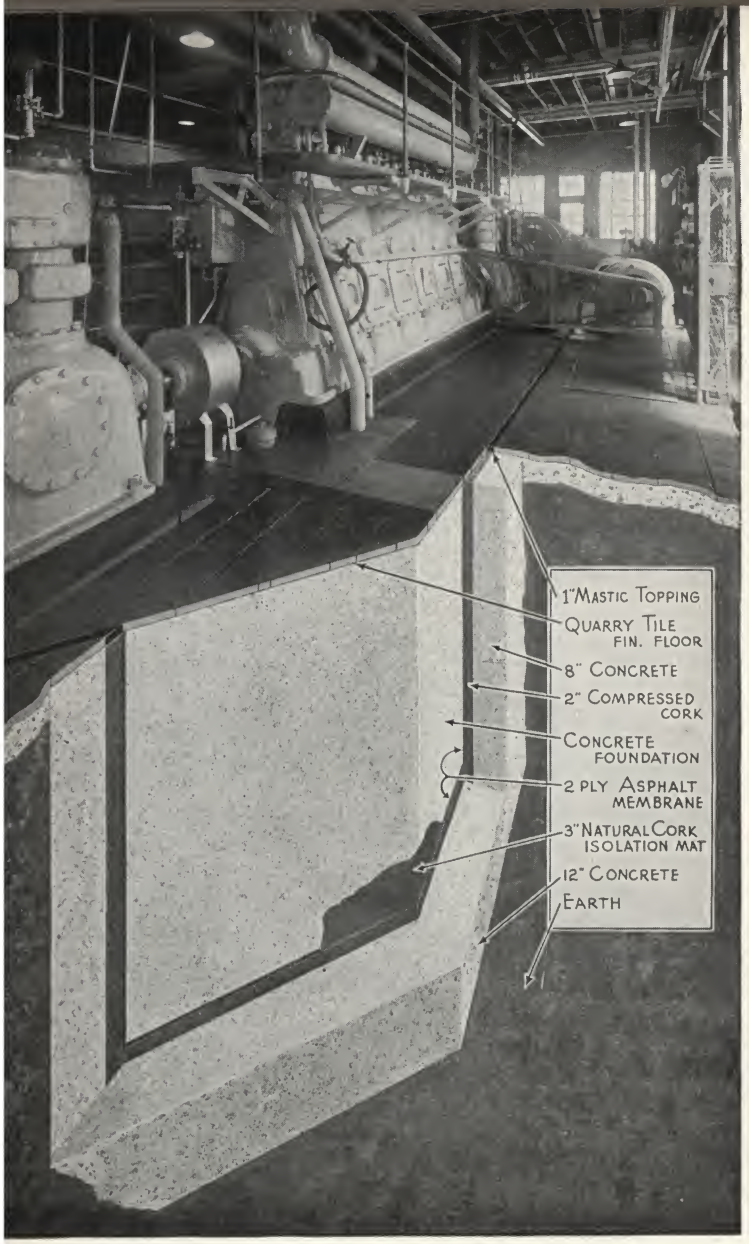
Vibration Isolation • • • •



Among the multitudinous uses to which cork has been applied, the one which is expanding most rapidly at the present time is the utilization of its peculiar physical characteristics in the elimination of machine vibration.

The principal characteristics of a medium for machinery isolation in the order of their importance, are:

(1) Ability to support the loads imposed upon it without too great, *or too variable,* a deflection.

(2) Ability to absorb vibration in the machine without transmitting it to the surrounding structure.

(3) Permanence, including ability to withstand repeated loading without fatigue or permanent set, ability to withstand the action of water, oil, acids or alkalis without deterioration, ability to maintain its resilience with age.

Of the many materials that have been used for isolation purposes at one time or another, cork has proved itself to be pre-eminently fitted for this work. It contains over 50% air by volume, and is made up of a myriad of tiny cells, hermetically sealed from each other by the structure of the wood. Its compression curves, therefore, resemble more nearly those of a gas than of an elastic solid, as is evident on page 19. This feature is important, because the resistance to loads, instead of being proportional to the amount of deflection, is proportional to the compression in the air cells; hence, under vibratory variations in loading, the active deflection is much smaller than for an elastic substance, while the cushioning effect is higher.

Cork isolation has proven itself under the pragmatic test of use, and many thousands of installations, some of them over a quarter of a century old, are giving complete satisfaction; often making possible the use of machines which without it could not be used in their present locations because of the vibration accompanying their operation.

Type of Cork Isolation to Use

Mundet Cork Isolation is made in two general types to conform with the class of loadings imposed upon it. They are as follows:

(1) **Mundet Natural Cork Isolation Mat**—This form of cork isolation is suited to loads of about 800 to 2000 lb. per sq. ft., normally encountered in machinery foundations. Blocks of natural cork of the required thickness are held within a rigid steel frame or are bound with asphalt paper applied in hot asphalt to the top and bottom sides of the strips. The plates when laid together form a continuous mat isolation of the exact size necessary. For isolating a machine in a pit with an envelope of cork, as shown in the illustration herewith, it is customary to use asphalt paper bound natural cork isolation mat. Where the machine is mounted on a floor slab without side isolation, it is customary to use steel bound natural cork isolation mat.

In the case of average machine vibrations 1½ to 2 in. of natural cork is adequate, but for more intense vibrations or shock loads, the thickness should be increased to 3 or 4 in.

(2) **Mundet Machinery Isolation Cork**—This is the material first used as isolation cork and, while it has been superseded by the above material for light and medium loads, for loads above 2000 lb. per sq. ft., Mundet Machinery Isolation Cork has not been surpassed. This cork is made in sheets, of various thicknesses, and in three densities, namely, light, medium and heavy.

For loadings of 2000 to 3000 lb. per sq. ft., it is customary to use either light or medium density, according to the character of the vibration. Light density is used for light vibrations and medium density for heavy vibrations. From 3000 to 3500 lb. per sq. ft., either medium density or heavy density is used, according to the character of the vibratory load, and from 3500 to 6000 lb. per sq. ft., it is customary to use heavy density. The thicknesses of machinery isolation cork used depend upon the frequency and amplitude of the vibration present, but the most common thicknesses employed are 1½, 2, 3 and 4 in.

PROVISION PLANTS

Lehman Packing Co., Brooklyn, N. Y.
Wm. A. Donnelly, Philadelphia, Pa.
Western Produce Co., Abiline, Tex.
Hildebrandt Provision Co., Cleveland, Ohio
International Produce Co., Chicago, Ill.
Providence Produce Terminal, Providence, R. I.

Specifications and Information on the Selection of MUNDET ISOLATION CORK

Machinery Isolation Cork is composed of granules cemented together in the process of manufacture which is the same as that of corkboard. It contains more cork per cubic foot than the natural cork isolation mats. It is structurally strong, but must have a higher initial loading than natural cork isolation mat before it equals the latter in efficiency as an isolation medium. The densities in pounds per cubic foot are:

Light, 1.00-1.30; Medium, 1.30-1.50; Heavy, 1.50-1.70. A special 1.80-1.90 density is available for severe vibrations combined with exceptionally heavy loads, but this should be used sparingly.

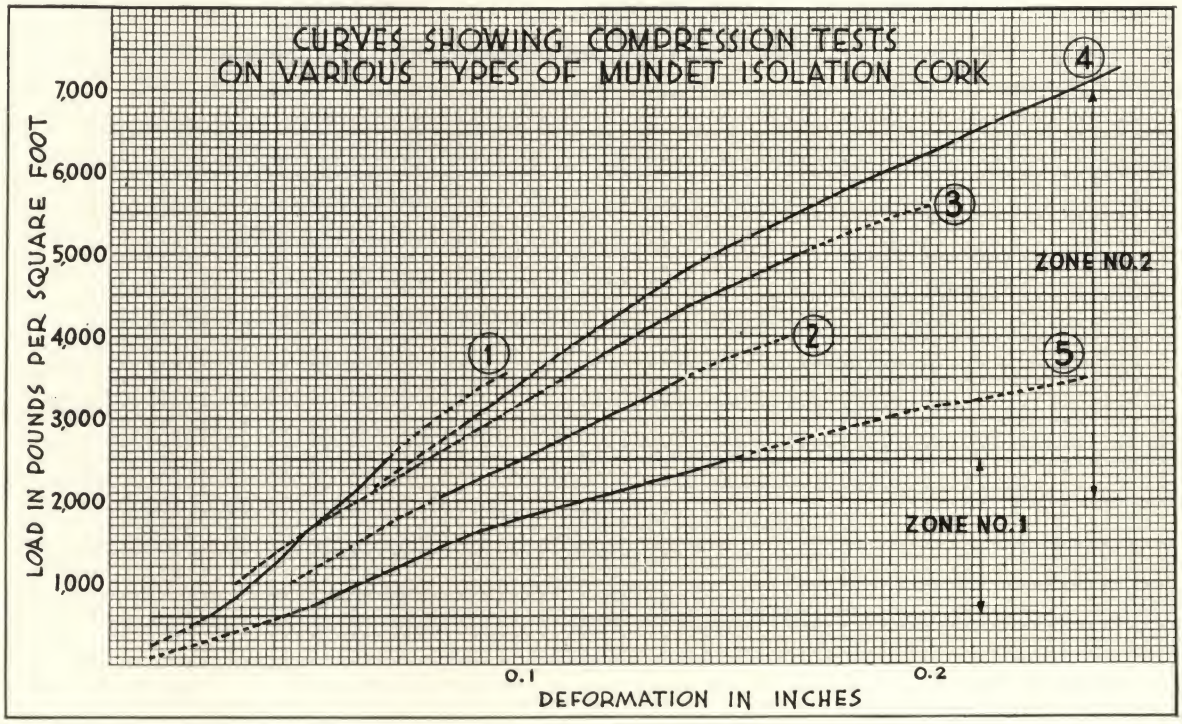
Shipment—All of the isolation listed is carried in stock with the exception of steel board of Mundet Natural Cork Isolation Mat, and any type of isolation, whether granulated or natural mat, can be shipped within 48 hours after the receipt of an order by our factory. Mundet Machinery Isolation Cork is stocked in our various branch warehouses for immediate shipment.

Specification for the Installation of Mundet Cork Isolation

(In a pit where monolithic concrete base is to be cast upon the cork.)

The sides and bottom of all machinery pits which are to receive isolation shall be true and even, as well as clean, smooth and dry, before cork isolation is applied.

The sides and bottom of all machinery foundation pits shall be lined with a layer of Mundet (*specify type of cork*). Bottom isolation shall be ..... in. thick and side isolation shall be ..... in. thick. The side and bottom cork shall be laid in a heavy mop coat of hot asphalt and the exposed surfaces protected with two layers of waterproofing felt, mopped in, with all edges lapped at least 6 in.



The above chart is included to assist the designer in selecting isolation cork. The curves are numbered and correspond to test pieces as follows:

(1) Mundet Natural Cork Isolation Mat—1½ in. thick.

(2) Mundet Machinery Isolation Cork—light density—2 in. thick.

(3) Mundet Machinery Isolation Cork—medium density—2 in. thick.

(4) Mundet Machinery Isolation Cork—heavy density—2 in. thick.

(5) Mundet Natural Cork Isolation Mat—3 in. thick.

The thicknesses selected are those commonly used in general practice. Curve No. 5 is included primarily to show that the amount of compression varies directly with the thickness of isolation used. This is true of all forms of cork isolation. Vibration absorption also varies approximately with thickness of isolation used.

The chart is divided into zones which show the recommended load limits. The curves are shown as solid lines within the zone limits, and their behavior outside of these limits is shown by the dotted extensions.

Zone No. 1 is for Mundet Natural Cork Isolation Mat.

Zone No. 2 is for Mundet Machinery Isolation Cork.

Mundet cork has been tested for static loads up to 15,000 lb. per sq. ft. Further information upon this subject is available. Our Engineering Department will co-operate in the design of machinery vibration isolation. A request directed to the Company or our nearest branch office will receive prompt and competent attention.

UNITED CORK COMPANIES

Manufacturers, Engineers and Contractors for Refrigeration Insulation, Air Conditioning Insulation, Sound and Vibration Absorption

KEARNY, N. J.

SALES OFFICES AND WAREHOUSES

ALBANY, N. Y.
BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
HARTFORD, CONN.
INDIANAPOLIS, IND.
MILWAUKEE, WIS.
NEW ORLEANS, LA.
NEW YORK, N. Y.
PHILADELPHIA, PA.
PITTSBURGH, PA.
ROCK ISLAND, ILL.
ST. LOUIS, MO.
WATERVILLE, ME.

COMPANY

UNITED'S Cork products are manufactured in the newest and one of the most modern cork factories. Over 25,000 installations, during past 30 years, including cold storage insulation, acoustical correction, cork flooring and other work requiring the use of cork, attest to UNITED'S dependability.

SERVICE ORGANIZATION

Complete branch and warehouse facilities are maintained in leading cities with experienced engineers thoroughly qualified to advise on insulation design and erection. Field erection workers at each branch have had long years of practical experience in cork installation work. UNITED'S Plan Department will gladly cooperate with architects and engineers in furnishing designs, drawings, specifications, etc., on any job requiring use of cork.

CORK PIPE COVERING

For brine, ammonia, ice or cold lines. Pipe covering and fitting jackets are moulded to fit absolutely tight. Finished with a coating of mineral rubber and applied with waterproof cement.

NATURAL GRANULATED CORK

Natural Granulated Cork is primarily used in fills requiring the qualities and strength of natural cork.

RE-GRANULATED CORK

This is a by-product obtained in the manufacture of corkboard. It has no capillarity and its insulation value is higher than natural granulated cork.

UNITED'S ACOUSTICAL CORKBOARD

UNITED'S "Acousticork" is usually applied 1½ in. thick. Has a high sound absorption coefficiency. Combines noise quieting with high insulating value. Easy to install. Structurally strong. Can be painted to harmonize with decorative scheme. High light reflection when painted. Flexible. Write for "Acousticork" Catalog.

UNITED'S CORK TILE FLOORING

Made in three shades of brown; in many sizes, $\frac{5}{16}$ or ½ in. thick. A quiet, dignified, resilient floor. Ask for "Cork Tile Flooring" Catalog.

UNITED'S CORK LAGGING

Beveled to any desired radius without finish, coated one side, or both sides with mineral rubber finish. Furnished for covering cylindrical equipment.

UNITED'S ROOF CORKBOARD INSULATION

Keeps upper floors warmer in winter, cooler in summer; eliminates condensation of moisture on the underside of ceilings.

CORK BRICK

Sustains heavy loads. Does not rot, chip, or splinter. Ideal for cow barns and horse stalls. Size 1¾ or 2x4x9 in.

ISOLATION CORKBOARD

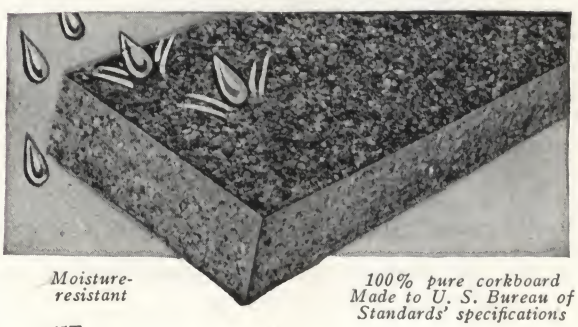
For absorbing vibrations and noise caused by pumps, fans, compressors, generators, motors, steam hammers, pressers, etc.

BULLETIN BOARDS

¼ in. thick unmounted; ½ in. thick mounted, and in various sizes up to 4x6 ft.

UNITED'S B. B. BLOCK BAKED CORKBOARD

Can be bent to conform to cylindrical equipment



Moisture-resistant

100% pure corkboard Made to U. S. Bureau of Standards' specifications

Block Baked by a new process of combined internal and external heating which assures higher insulation efficiency and better control of low temperatures. It eliminates charred surfaces preventing breakdown of cork granules, assuring longer life of the corkboard installation. Possesses greater structural strength, flexibility and insulating qualities.

Adaptable to all kinds of construction. Can be cut, sawed; or nailed like lumber. Sanitary, remains dry, will not rot nor mould. Light in weight, fire-resistant, compact. Takes a minimum of space. Costs no more than ordinary corkboard.

Made in blocks measuring up to 36 in. wide x 36 in. long and from 1 to 12 in. thicknesses.

Write for general catalog and detailed specifications.

THICKNESSES OF UNITED'S CORKBOARD

For Rooms or Buildings

Range of temperatures in storage areas	Walls, in.	Ceilings, in.	Floors on ground, in.	Floors above ground, in.	Roofs, in.
Below —15° F.	8	8	7	8	9
—15° F. to — 5° F.	7	7	6	7	8
— 5° F. to 10° F.	6	6	5	6	7
10° F. to 25° F.	5	5	4	5	6
25° F. to 40° F.	4	4	3	4	5
40° F. to 50° F.	3	3	2	3	4
50° F. to 60° F.	2	2	..	2	3
60° F. and above	2	2	..	2	2

ESTABLISHED 1873

THE PHILIP CAREY COMPANY

Manufacturers of Heat Insulation and Asbestos Products

LOCKLAND, CINCINNATI, OHIO

ATLANTA, GA.
BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHARLOTTE, N. C.
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CLEVELAND, OHIO
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INDIANAPOLIS, IND.
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PHILADELPHIA, PA.
PITTSBURGH, PA.
ST. LOUIS, MO.
SEATTLE, WASH.
WASHINGTON, D. C.
WHEELING, W. VA.

For pages on Carey Built-up Roofing, Shingles and Home Insulation, see File Index

CAREYCEL, AN IMPROVED ASBESTOS HEAT INSULATION PRODUCT

Product

CAREYCEL is a new, improved, asbestos heat insulation product, in the form of sections for covering pipe; also blocks and sheets for insulating ducts, furnace casings, oven walls, and similar equipment where the temperature does not exceed 300° F. It is designed primarily for insulating heating systems.

Carey PRODUCTS
REG. U.S. PAT. OFF.
TRADE-MARK

No Shrinkage

The elimination of heat shrinkage does away with wasteful and unsightly heat shrinkage cracks so often found in asbestos pipe coverings. Laboratory tests show maximum heat shrinkage of 0.05%.

Sturdier Construction

Illustration shows the compact, laminated structure. This gives more body and greater resistance to damage than is found in the conventional, cellular, Air Cell type of structure.

Smooth Finish

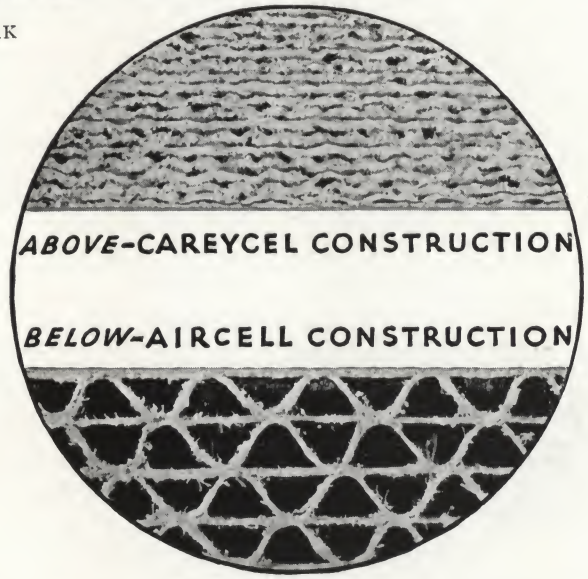
The laminated structure eliminates the ridged, unsightly appearance so often found in inexpensive, low pressure insulation.

Increased Efficiency

The exclusive patented process of "cellizing" the asbestos felt produces innumerable, very small, enclosed air cells, resulting in heat conductivity approximately 30% lower than through the conventional corrugated Air Cell type of structure. See test data (Mellon Institute) in next column.

Low Cost

All the advantages of CAREYCEL are available without a price premium. It sells in the price range of the lowest price cellular asbestos coverings.



THERMAL CONDUCTIVITY

B.t.u. per Hour per Square Foot per ° F. per Inch Thickness

Mean Temperature ° F. / Approximate metal temperature	100° F. / 125° F.	150° F. / 195° F.	200° F. / 260° F.
Careycel	0.377	0.410	0.443
Standard Air Cell (4-ply per inch)	0.531	0.590	0.650

HEAT INSULATION SPECIFICATIONS

Boilers—Residential—Steam or Hot Water—Cover with 1-in. thick 85% Magnesia Blocks re-enforced with wire mesh and finish with ½-in. thickness Carey No. 100 Hard Finish Asbestos Cement, troweled smooth.

Boilers — Commercial — *Low Pressure Steam* — Cover all steam heated portions of the boiler with 1½-in. thick 85% Magnesia Blocks, firmly wired in place and finished with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth.

Boilers — Commercial — *Over 100 Lbs. Steam Pressure*—Cover all boiler drums and drum ends, and other steam heated portions of the boiler with 2-in. thick 85% Magnesia Blocks, firmly wired on and finished with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh and troweled smooth.

Boiler Walls—In brick wall construction install between fire brick and red brick, 3-in. thickness of Hi-Temp. No. 19 Blocks in two layers, each 1½-in. thick, and erected to break joints. On water walls apply a first layer of 3-in. thick Hi-Temp No. 19 Blocks and a second layer of 1-in. thick 85% Magnesia Blocks erected to break all joints. Finish with panels of CAREYCEL Insulated Sheathing or Carey Marine Panel erected according to manufacturer's specifications.

Smoke Flue—Commercial Boilers—*External Insulation*—On flue connections from boiler to smoke stack apply 2-in. thick 85% Magnesia Blocks over either V-rib expanded metal lath or pencil rods to which the blocks shall be firmly wired. Finish with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth.

Internal Insulation—To internal surfaces of boiler breechings apply 2-in. thick Carey Hi-Temp No. 12 Block stuck to metal with Carey Fibrous Adhesive and held in place with ⅜-in. stove bolts, at least two per block. These stove bolts shall be welded to the breeching and extend through the block. Apply expanded metal lath over the block, fastening it in place by washers and nuts on the stove bolts. Over blocks apply two ⅜-in. thick coats of Carey Vitricel Cement applied according to manufacturer's instructions.

Economizer and Air Preheater Ducts—Line with 2½-in. thick Carey Hi-Temp No. 19 Blocks applied as specified for breeching insulation. Finish with two ⅜-in. thick coats of Carey Vitricel Cement applied according to manufacturer's instructions.

Steel Stack Insulation—Insulate the interior of the steel stack with Carey Vitricel Sheets, 2-in. thick, curved to fit the stack diameter. Stack contractor shall apply, on 36½-in. centers for the height of the stack, angle iron rings, 1½x1½x$\frac{3}{16}$ in., punched with ¼-in. holes on 12-in. centers in the projecting leg. Vitricel Sheets shall be held in place with suitable clips. All cracks and joints shall be filled and all metal clips shall be covered with Carey Vitricel or other suitable refractory cement.

Boiler Room Ceiling—Insulation shall consist of 2-in. thick 85% Magnesia Blocks, supported by approved sheet metal tee irons, suspended from the main ceiling. Firmly attach expanded metal lath to the tee iron members and make a finished ceiling with ½-in. thickness of Carey No. 100 Hard Finish Asbestos Cement, troweled smooth attached to ceiling.

Air Conditioning Ducts, Commercial—Use the all Asbestos Insulated Careyduct or cover all metal ducts with 1-in. thick CAREYCEL Boards firmly wired in place or attached with sheet metal screws. Seal all cracks and joints with 3-in. wide asbestos paper tape firmly pasted on. Where duct work is exposed, apply a layer of wool felt paper and over this 8-oz. canvas smoothly pasted on. Size and finish with two coats of lead and oil paint of color to be selected.

Warm Air Ducts—Residential—Use the all Asbestos Insulated Careyduct or cover metal ducts with ½-in. thick CAREYCEL insulation applied and finished as specified for comercial installations.

Tanks, Heaters, Receivers, Traps, Etc.—Cover all such equipment with 85% Magnesia Blocks, firmly wired in place and finished with ½-in. thickness of Carey No. 100 Hard Finish Asbestos Cement, reenforced with hexagonal wire mesh, and troweled smooth. For temperatures under 250° F. use 1-in. thickness blocks; for temperatures above 250° F. use 1½-in. thickness blocks.

PIPING

CONDENSED INSULATION SPECIFICATIONS FOR POWER PLANTS, HEATING SYSTEMS AND PROCESS EQUIPMENT

HIGH TEMPERATURE PIPING INSULATION

Temperature	Recommended Carey Product	Pipe Sizes			
		½" to 1½" inc.	2" to 4½" inc.	5" to 8" inc.	9" and larger
700° F. to 850° F.	Inner Layer: Hi-Temp. No. 12 Outer Layer: 85% Magnesia	2" No outer layer	1¼" minimum 2"	1½" 2"	1½" 2½"
550° F. to 700° F.	Inner Layer: Hi-Temp. No. 12 Outer Layer: 85% Magnesia	2" No outer layer	1¼" minimum 1½"	1½" 1½"	1½" 2"

STEAM, HOT WATER AND LOW PRESSURE PIPING INSULATION

		½" to 3½" inc.	4" to 10" inc.	12" and larger
450° F. to 550° F.	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	2" 2"	Double Std. Thick 2½"	Double Std. 3" Thick 3"
350° F. to 450° F. (120-415 lb. pres.)	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	1½" 1½"	Double Std. Thick 2"	Double Std. 3" Thick 2½"
250° F. to 350° F. (30-120 lb. pres.)	Carey 85% Magnesia Carey Multi-Ply or Asbestos Sponge	Std. Thick 1"	1½" 1½"	2" 2"
150° F. to 250° F. (Hot Water & Low Pres.)	Carey 85% Magnesia Carey Careycel	Std. Thick 1"	Std. Thick 1"	1½" 1½"

COLD WATER AND MISCELLANEOUS PIPING INSULATION

Cold Water Piping (60° F. and over)	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick To prevent freezing—Double 1" thick Protecto Covering
Ice Water Piping (40° F. to 55° F.)	50° F. and above—Double ½" thick Impervo Under 50° F. —Double ¾" thick Impervo
Roof Leaders, Down-Spouts, Soil and Waste Piping	All pipe sizes—Perfecto (Wool Felt) Covering 1" thick
Brine Piping	From 15° to 32° F., Brine thickness Cork or 2 layers, 1" thick Hair Felt alternated with waterproof paper. From 0° to 15° F., Brine thickness Cork or 3 layers, 1" thick Hair Felt alternated with waterproof paper. From 30° F. to 0° F., special thickness Brine Cork or 4 layers of 1" thick Hair Felt alternated with waterproof paper.

Application—All double layer coverings to have staggered joints, first layer being firmly wired or otherwise secured in place. External finish of covering to be standard pasted canvas jackets and metal bands on 18-in. centers. Canvas to be painted with one coat of cold water paint or sized and painted with two coats of lead and oil paint of color desired. Alternate finish may be 8 oz. canvas applied over building paper with Carey Metal Stitch or hand sewed three stitches per inch.

Fittings, Flanges and Valves

Hot Lines—Cover with 85% Magnesia Block and Asbestos Cement, or all Super 606 Cement, to the same thickness as adjacent pipe covering. Finish with canvas jacket, smoothly pasted on.

Cold and Ice Water Lines—Cover with Hair Felt and finish with a ½-in. thick coat of Carey No. 100 Hard Finish Asbestos Cement, troweled smooth. Total insulation thickness to be the same as that of adjacent pipe covering.

Outdoor Pipes and Equipment

Waterproof pipe insulation with 45-lb. per square asphalt roofing jackets, held in place with Carey Metal Stitch No. 2, jackets to have 2-in. laps in all directions. Waterproof valves, fittings, tanks, etc., with ¼-in. thick (dry) Thermotex Asphalt Emulsion applied in two layers, using wire mesh reenforced for large areas.

Underground Pipe Insulation

Insulate and waterproof all underground steam pipes with Carey System of Insulation for Underground Steam Pipes, strictly in accordance with manufacturer's specifications.

EHRET MAGNESIA MANUFACTURING CO.

VALLEY FORGE, PA.

NEW YORK PHILADELPHIA CHICAGO

(Distributors listed on following page)

EHRET INSULATION SERVICE

With over 40 years' experience in the manufacture and application of insulations, the EHRET MAGNESIA MANUFACTURING COMPANY provides, with branch offices and distributors, a capable and complete insulation service.

Ehret insulation specialists are ready at all times to discuss insulation problems, make recommendations, furnish materials, and apply them with the skill that is needed to obtain full value from the materials used. Details of Ehret products and Ehret insulation service will be supplied on request.

EHRET'S 85% MAGNESIA

Advantages

Ehret's 85% Magnesia consists of pure hydrated carbonate of magnesia and especially selected asbestos fibres in the approximate proportion of 85% of magnesia to 15% of asbestos fibres. It has high transverse and compressive strength, and as a consequence it does not sag, buckle or shrink when in service. Molded forms of this material can be easily worked, applied, removed and re-used, with no waste of the material or loss of insulating efficiency. It is light in weight, and wetting or even long-time total immersion does it no harm.

85% Magnesia is chemically inert and exposure to most chemicals or their fumes has no harmful effects. It does not stick to or corrode the surfaces to which it is applied, and is an economical material to use.

Pipe Coverings

Ehret's 85% Magnesia is an ideal material for covering pipes whose temperatures range up to 600° F. The table below gives recommended thicknesses for normal insulation requirements. For temperatures higher than 600°F. Ehret's Enduro should be used in combination with Ehret's 85% Magnesia.

When desired, weatherproof jackets can be furnished as an integral part of the pipe covering, or may be furnished separately in cut or roll form.

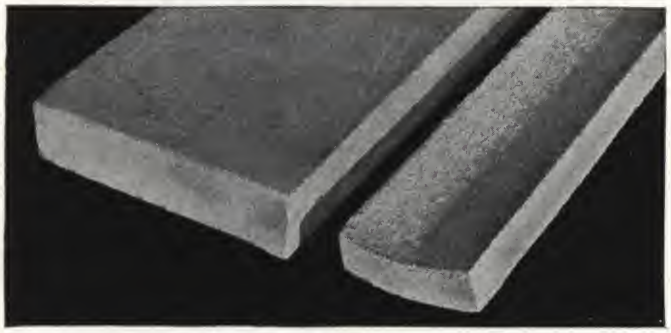
THICKNESS RECOMMENDATIONS, INDOORS (ROOM TEMPERATURE 70°)

Pipe size	Temperature of hot surface in degree Fahrenheit									
	Under 300	301 to 400	401 to 500	501 to 600	601 to 700		701 to 800		801 to 900	
	85% Magnesia				Enduro	Magnesia	Enduro	Magnesia	Enduro	Magnesia
Under 2"	Std.	1½	2	2	2	...	2	..	2	...
2" to 4" incl..	Std.	1½	2	2	1½	1½	1½	2	2	2
4½" to 6" incl.	Std.	2	D.S.	D.S.	1½	2	1½	2	2	2
7" and over ..	Std.	2	D.S.	D.S.	1½	2	2	2	2	2½
Flat surface .	1½	2	2½	3	1½	2	2	2	2	2½

Blocks and Cement

Ehret's 85% Magnesia is furnished in flat blocks, standard width being 3, 6 and 12 in.; standard lengths 18 and 36 in. Regular thicknesses are from 1 in. up to and including 4 in., in ⅛ in. increments. Blocks of 12 in. width are not regularly furnished less than 1½ in. in thickness.

Ehret's 85% Magnesia Pipe Coverings



Flat and Curved Blocks

Curved Blocks—85% Magnesia can be furnished in curved blocks in the same thickness as flat blocks, with a minimum thickness of 1¼ in. The maximum thickness is that which can be cut from a 4 in. flat block.

Special Sizes and Shapes—Ehret's 85% Magnesia can be supplied in special sizes and shapes up to 40 in. long, 12 in. wide, and from ⅜ in. to 1 in. thick.

85% Magnesia Cement—Of the same material as standard molded forms, 85% Magnesia Cement is of a light, loose fluffy character, and needs only to be mixed with water to make a plastic cement.

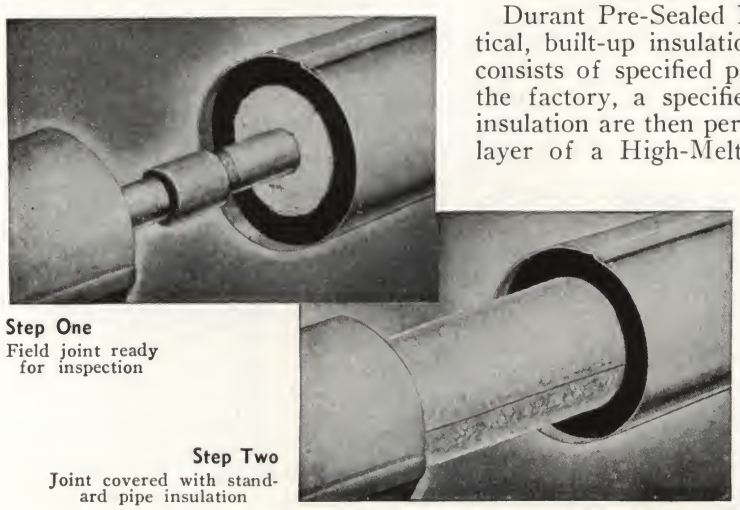
Packed in 60 lb. bags, Ehret's 85% Magnesia Cement will cover approximately 40 square feet, 1 in. thick per bag.

OTHER EHRET HEAT INSULATION PRODUCTS

The Ehret line of Heat Insulation Products also includes: Air Cell Pipe and Block Insulation, Enduro High Temperature Pipe and Block Insulation, Flexible Asbestos Range Boiler Jackets and Rock Wool Home Insulation in loose and bat form.

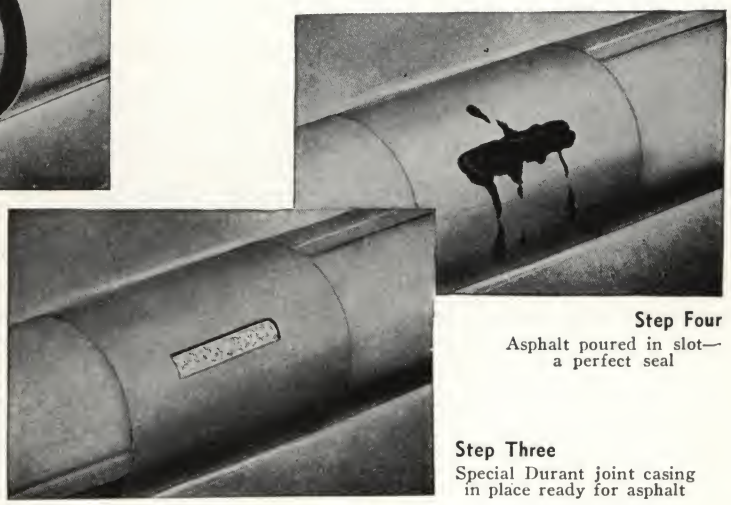
FOR DEPENDABLE PROTECTION—SPECIFY EHRET'S DURANT SYSTEM PRE-SEALED INSULATED PIPE

Durant Pre-Sealed Insulated Pipe answers a long felt need for a practical, built-up insulation system for under-ground and outdoor lines. It consists of specified pipe of any lengths over which has been applied, at the factory, a specified insulation of the required thickness. Pipe and insulation are then perfectly sealed by the application of a uniformly thick layer of a High-Melting-Point Non-Porous Asphalt between the outer surface of the insulation and a concentrically-held metal jacket, which provides ample protection against surface damage during handling and after installation.



Step One
Field joint ready for inspection

Step Two
Joint covered with standard pipe insulation



Step Four
Asphalt poured in slot—a perfect seal

Step Three
Special Durant joint casing in place ready for asphalt

The Durant System will be found to be the essence of simplicity, both in construction and installation. Maintenance costs are practically non-existent. If pipes wear out or the system is to be tapped for connecting lines, there is no expensive conduit to be broken into and replaced. Electrolysis, exterior corrosion and exterior erosion are eliminated.

The complete system is "tailor made" for each job. Durant Systems are furnished in any specified kind of pipe, either coated or uncoated inside, in standard or special pipe lengths, delivered to the job ready for installation.

The illustrations above show the four simple steps used in completing field joints. By this method of insulating and sealing the joints, the entire system becomes an integral unit. There are no seams to leak and both piping and insulation are permanently protected.

OTHER EHRET PRODUCTS

Ehret's Cold Insulations include Ehret's Hair Felt (in rolls) for all conditions from 100° F. to lowest sub-zero temperatures, Ehret's Cork Pipe Covering, Corkboard, Anti-Sweat Pipe Covering, Alumino Wool Felt Pipe Insulation and Ehret's Improved and Standard Wool Felt Pipe Insulation and Frost-proof Pipe Insulation.

Miscellaneous materials include Ehret's Asbestos Millboard, Asbestos Paper and Rollboard, Asbestos Lumber, Fibrekote and Asbestos Furnace Cement.

For complete description of any of the above mentioned products write to the main office or to any of the distributors listed below.

Full Information about Ehret Products Supplied on Request by the Ehret Company, their Branch Offices and the Following Ehret Distributors:

ALBANY, N. Y., Hudson Valley Asbestos Corp.
BALTIMORE, MD., Wallace & Gale Co.
BUFFALO, N. Y., Claxton Asbestos Co.
CAMBRIDGE, MASS., Hinman Asbestos Corp.
Nightingale & Childs, Inc.
CHICAGO, ILL., Paul J. Krez Co.
CINCINNATI, OHIO, Cincinnati Gasket & Packing Co.
CLEVELAND, OHIO, Clark Asbestos Co.
DALLAS, TEX., Southwest Insulation & Packing Co.
DETROIT, MICH., C. Stanley Morgan
HOLYOKE, MASS., P. M. Taft Asbestos Co.
INDIANAPOLIS, IND., Graham Asbestos Co.
LOS ANGELES, CAL., Cork Insulation Co.
LOUISVILLE, KY., Kentucky Pipe Covering Co.
MEMPHIS, TENN., Lewis Supply Co.
MINNEAPOLIS, MINN., A. H. Bennett Co.
MILWAUKEE, WIS., Sprinkmann Sons Corp.
NEWARK, N. J., Chas. S. Wood & Co.
NEW HAVEN, CONN., Tomlinson Asbestos Co.
NEW ORLEANS, LA., Eagle Asbestos & Packing Co., Inc.
NEWPORT NEWS, VA., Noland Co.
PHILADELPHIA, PA., Philadelphia Asbestos Co.
PITTSBURGH, PA., George V. Hamilton Co.
PEORIA, ILL., Sprinkmann Sons Corp.
PORTLAND, ORE., Gillen, Cole Co.
RICHMOND, VA., Southern Insulation Co.
ROCHESTER, N. Y., Chamberlin Rubber Co.
SAN FRANCISCO, CAL., Standard Asbestos Co.
SEATTLE, WASH., Chas. R. Brower Co.
ST. LOUIS, MO., Insulating & Materials Co.
WASHINGTON, D. C., Standard Insulation Co.
WILMINGTON, DEL., Desco Corp.
YOUNGSTOWN, OHIO, Asbestos Service Co.

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 East 40th Street, NEW YORK, N. Y.

Member of The Producers' Council, Inc.

Products

JOHNS-MANVILLE INSULATIONS.

For the following Johns-Manville products, see File Index: Acoustical Treatment and Sound Isolation; Asbestos and Asphalt Shingles; Built-up Roofs; Insulated Roofs; Home Insulation; Insulating Board; Transite Walls; Asphalt Tile Flooring; Transite, Flat and Corrugated; Asbestos Wainscoting and Flexboard; Flush Doors; Steeltex for Plaster, Stucco, and Brick or Stone veneer; Steeltex Floor Lath and Welded Wire Reinforcement.

JOHNS-MANVILLE INSULATIONS

Because, for any specific service, there is one type and form of insulation that will serve better, more economically than any other, JOHNS-MANVILLE maintains a complete line of insulations.

From the four mineral products—asbestos, magnesium carbonate, diatomaceous silica (Celite), and rock or mineral wool—JOHNS-MANVILLE produces insulation in the forms of sectional pipe covering; insulating sheets, blocks, bricks and blankets; insulating cements, fillers and finishes; insulating papers and felts; as well as a lightweight aggregate used with portland cement for making insulating concrete. A wide range of hair felt products completes the line.

In the brief descriptions of heating, plumbing and refrigeration insulations, in the paragraphs following, the materials included are recommended for their recognized efficiency, desirability and economy for the various services covered.

In addition to these, JOHNS-MANVILLE also manufactures other materials for insulating homes and buildings, and for the insulation of every kind of high temperature industrial equipment.

Complete details of any type of insulation for any service will be promptly furnished upon application to the nearest JOHNS-MANVILLE office. The J-M Industrial Insulation catalog may also be obtained on request.

J-M 85% Magnesia Pipe Insulation and Blocks

JOHNS-MANVILLE recommends 85% Magnesia as the most generally satisfactory and economical material for insulating steam lines at temperatures up to 600° F.

For superheated steam at temperatures above 600° F., J-M 85% Magnesia is often used outside a layer of Superex.

J-M 85% Magnesia
Today it is the most widely used insulation for steam lines at temperatures up to 600° F.

J-M 85% Magnesia Pipe Insulation is furnished in 3-ft. sections and segments in the following thicknesses: Standard (which varies from ⅞ to 1½ in., depending on pipe size), 1½, 2, 2½ in.; Double Standard (two layers, each Standard thick); and 3 in. (double layer for broken joint construction).

J-M 85% Magnesia blocks are furnished in standard sizes 3x18 and 6x36 in., flat or curved, from ½ to 4 in. thick. Other sizes, and lagging, on special order.

In general, all pipes, fittings and flanges at temperatures below 600° F., except small fittings which are insulated with J-M No. 302 Cement, should be insulated with Asbesto-Sponge Felted or J-M 85% Magnesia to the thickness given in table below. Asbesto-Sponge Felted Pipe Insulation may be used at temperatures up to 700° F.

On outside piping it is customary to use insulation ½ in. thicker than that on indoor lines.

J-M PIPE INSULATION RECOMMENDATIONS FOR TEMPERATURES TO 600° F.
J-M 85% Magnesia or Asbesto-Sponge Felted

Thickness of insulation, J-M 85% Magnesia			Temperature, deg. F.	Thickness of insulation, Asbesto-Sponge Felted		
Pipes larger than 4 in.	Pipes 2 to 4 in.	Pipes smaller than 2 in.		Pipes larger than 4 in.	Pipes 2 to 4 in.	Pipes smaller than 2 in.
Std.	Std.	Std.	Below 212	1	1	1
Std.	Std.	Std.	212 to 266	1	1	1
1½	Std.	Std.	267 to 337	1½	1	1
2	1½	Std.	338 to 387	2	1½	1
Dbl. Std.	2	1½	388 to 499	2½	2	1½
3	Dbl. Std.	2	500 to 599	3	2½	2
			600 to 700	3½	3	2

J-M Asbesto-Sponge Felted Insulation

Asbesto-Sponge Felted is not only the most efficient commercial pipe insulation for temperatures up to 700° F., but it is also the most durable. It is practically abuse-proof, standing up indefinitely under vibration and wear and tear that quickly affect other materials.

Like J-M 85% Magnesia, it is often used outside a layer of Superex for insulating high temperature equipment.

Asbesto-Sponge Felted is furnished in 3-ft. sections in thicknesses from 1 to 3 in., also in sheets 24x36 in. and blocks 6x36 in. from ½ to 4 in. thick.

Pre-shrunk Asbestocel
With non-canvas finishes, saves one-third the labor cost

J-M Pre-Shrunk Asbestocel Pipe Insulation

For low pressure steam and hot water lines

Pre-shrunk Asbestocel sectional pipe insulation is made of moisture-resisting asbestos felts to prevent objectionable shrinkage in service. Furnished in either aluminum finish, asbestos paper finish or with the usual canvas jacket. Thicknesses up to eight ¼-in. plies. For temperatures up to 300° F.

Asbestocel is also furnished in sheets and blocks, 4 plies to the inch, sizes 36x36, 18x36, 12x36 and 6x36 in. from ½ to 4 in. thick, and in flexible roll form 37 in. wide and ¼ in. thick.

J-M Pre-Shrunk Wool Felt Pipe Insulation

For service water lines

Made of specially indented wool felt and provided with a dual-service liner for use on hot or cold water lines. Treated to prevent objectionable shrinkage in service. Furnished with either aluminum finish or the usual canvas jacket. Thicknesses ½, ¾, 1, double ½, and double ¾ in. for pipe sizes from ½ and larger. For temperatures from 40° to 200° F.

Pre-shrunk Wool Felt
Furnished either with canvas or with an aluminum finish that requires no pasting and saves one-third on labor

J-M Rock Cork Sheets and Pipe Insulation

For low temperatures

Because Rock Cork has a successful service record extending for more than a quarter of a century, JOHNS-MANVILLE recommends it as an efficient and economical insulation for cold rooms, ducts and refrigerating equipment.

Made of rock wool combined with a waterproof binding ingredient, Rock Cork is mineral in composition; highly moisture-resistant; permanent; rotproof; chemically inert; odorless and incapable of absorbing odors. Completely sanitary, it will not harbor vermin or rats and cannot support the growth of mold or bacteria. With its tiny air spaces completely sealed with the waterproof binder, Rock Cork resists the infiltration of air and moisture, thus eliminating this direct cause of most insulation failures. No other low temperature insulation is as effective as Rock Cork in resistance to moisture absorption. More than any other one feature, this distinctive characteristic has been responsible for the outstanding service record of Rock Cork.

J-M Rock Cork is furnished in standard sheets, 18x36 in.; in thicknesses of 1½, 2, 2½, 3 and 4 in., and 18x18 in. in 1-in. thickness. Other sizes, within the above limitations and of standard thickness, can be furnished on special order.

Rock Cork in lagging form for curved surfaces is supplied 18 in. long, 1½, 2, 3 and 4 in. thick, and 2 to 5 in. wide, depending on diameter.

Rock Cork Pipe Insulation is moisture-proof

In Rock Cork Pipe Insulation, JOHNS-MANVILLE makes available an insulation for low temperature pipes that combines with the proved permanent high efficiency and unexcelled moisture-resistance of Rock Cork Sheets the added protection of *hermetic sealing*—a waterproof jacket, integral with the pipe covering and provided with a flap which is sealed down over the longitudinal joint at installation.

With similar treatment of the circumferential joint between sections, and the most effective method of insulating fittings, Rock Cork Pipe Covering provides an unbroken, seamless sheath of insulation, permanently airtight and moistureproof.

Fittings, the usual "weak spots" in low temperature pipe insulation, are insulated with Zerotex—a special waterproofed rock wool—and then double-sealed to provide an impenetrable barrier to moisture at these vulnerable points.

Other J-M Insulations

For high temperatures, the J-M line includes Superex pipe insulation and blocks for temperatures to 1900° F., Sil-O-Cel Natural Brick for temperatures to 1600° F. and JM-20 and Sil-O-Cel C-22 Brick for use up to 2000° F. The catalog "J-M Industrial Insulations" contains complete descriptions of the entire line. It is free on request.

J-M Rock Cork Sheets
Efficient, permanent and economical

MEMORANDA

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES

ATLANTA, GA. CHICAGO, ILL. CLEVELAND, OHIO HOUSTON, TEX.
NEW YORK, N. Y. PHILADELPHIA, PA. SAN FRANCISCO, CAL.

For K&M "Century" Asbestos Roofing and Siding Shingles, Decorative Wallboards, Mineral Wool, Home Insulations, Asbestos Corrugated and Trafford Tile, see File Index

PIPE INSULATIONS

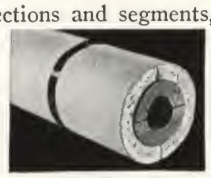
"Featherweight" 85% Magnesia

K&M "Featherweight" 85% Magnesia Pipe Insulations—This type of insulation, originated by the KEASBEY & MATTISON COMPANY, has the high insulating properties of basic carbonate of magnesia which material, combined with the proper amount of clean asbestos fibre as a binding element, produces a material absolutely fireproof, strong mechanically, exceptionally light in weight and highly efficient as an insulating material. For temperatures up to 600° F.

"Featherweight" 85% Magnesia Pipe Insulation is made in sections and segments 3 ft. long and in thicknesses as follows: *Standard:* 1½ in., 2 in. *Double Standard:* (Broken Joint) and 3 in. thickness (Broken Joint).

K&M "Hy-Temp" Pipe Insulation—Will maintain high efficiency where temperatures run from 600° to 1900° F. Hy-Temp is a combination of high heat resisting materials and asbestos fibre, which materials when bonded together produce an insulation of low thermal conductivity and relatively light weight—(about 24 lbs. per cu. ft.).

Hy-Temp Pipe Insulation is made in sections and segments, 3 ft. in length and in the same moulded shapes as "Featherweight" 85% Magnesia Insulation.



"Hy-Temp" Combination

"Hy-Temp" Combination Pipe Insulation—This consists of an inner layer of Hy-Temp Insulation and an outer layer of "Featherweight" 85% Magnesia Insulation. This construction combines the great insulation efficiency of "Featherweight" 85% Magnesia with the high heat resistance of Hy-Temp Insulation.

Lamino Sponge Felt

Lamino Sponge Felt Pipe Insulation—A laminated insulation composed of asbestos fibre and particles of finely ground sponge, which materials form a cellular felt that is built up, having about forty laminations per inch of thickness.

It is tough and flexible. Recommended where temperatures range up to 700° F.

K&M Simplex "Super-Shrunk" Pipe Insulation (Air Cell)—For use where temperatures do not exceed 300° F. It is made from asbestos corrugated felt, alternated with a layer of plain asbestos felt, firmly bonded together. It is superior in that it is regularly furnished with a moisture-proof, non-absorbent outer jacket of smooth asbestos felt. Jacket can be painted if so desired.

Simplex "Super-Shrunk" Pipe Insulation is also available in White Glazed Finish which gives a smooth, attractive surface. Both finishes can be easily cleaned off with a damp cloth.

Regular canvas-jacketed Air Cell is also available, in 3-ft. sections in standard thicknesses of 2, 3, and 4 plies. Simplex is furnished in 3-ft. sections in 3 ply (¾ in. thick) and 4-ply (1 in. thick) only.

Simplex "Super-Shrunk"

WOOLFELT PIPE INSULATION

Duplex Woolfelt

Duplex Woolfelt Pipe Insulation—A woolfelt insulation designed to give satisfactory service on either cold or hot water service lines. A special impregnated inner lining assures maximum service for these purposes.

Non-Sweat Pipe Insulation—An insulation made in single and double layer construction composed of a combination of insulating and waterproofing felt. Single layer is made in thicknesses of ½ and ¾ in. Double layer (Broken Joint) is made in thicknesses 1, 1½, and 2 in. The double layer, or Broken Joint, construction eliminates the longitudinal and the abutting joints.

Non-Sweat Pipe Insulation is a superior covering for use on cold water lines.

Non-Frost Pipe Insulation—This insulation is constructed of layers of hairfelt, surrounded by several layers of woolfelt and a layer of treated woolfelt inside the hairfelt to prevent the hair coming in contact with the pipe surface. For use on cold water pipes that are exposed to moderately low temperatures.

Non-Frost Pipe Insulation is furnished in 3-ft. lengths, with canvas jacket and brass lacquered bands. It is made in all pipe sizes from ½ in. up, and in one thickness—about 1¼ in.

SHEET AND BLOCK INSULATIONS

K&M "Featherweight" 85% Magnesia Block Insulation—This material is composed of carbonate of magnesia and asbestos fibre manufactured in exactly the same manner as 85% "Featherweight" Magnesia Pipe Insulation. Block Insulation is moulded and machined into proper form.

It is designed particularly for use on flat, curved and irregular surfaces of boilers, breachings, walls, stills and tanks.

K&M "Hy-Temp" Block Insulation—Hy-Temp Block Insulation is manufactured from the same combination of materials as Hy-Temp Pipe Insulation and carries the same essential qualities of heat resistance, together with mechanical strength and durability.

The blocks are furnished in standard sizes 3", 6", 9" and 12" wide x 36" long, flat and curved, in thicknesses ½ to 4 in. Weight is approximately 2 lbs. per sq. ft., per 1 in. of thickness.

"Hy-Temp" Combination Block Insulation—This combination of insulation is an inner layer of Hy-Temp Blocks and an outer layer of "Featherweight" 85% Magnesia Block. The thickness of the Hy-Temp Block necessary to give maximum efficiency is determined on the basis of the maximum temperature on the inner surface of the Hy-Temp and affords protection to the "Featherweight" 85% Magnesia outer layer of insulation which is high in insulation value, but lower in heat resistance than Hy-Temp Insulation.

Lamino Sponge Felt Sheet and Block Insulation—This block insulation is recommended where surface temperatures do not exceed 700° F. It is fabricated and not a moulded insulation. Its initial efficiency is often higher than 85% Magnesia Insulation.

Lamino Sponge Felt Block can be used as an outer layer in combination with Hy-Temp block, which combination permits its use for much higher operating temperatures than 700° F.

K&M best in asbestos

THE RUBEROID CO.

Manufacturers of Ruberoid-Watson Insulating Products

EXECUTIVE OFFICES
500 Fifth Avenue, NEW YORK, N. Y.

DIVISIONAL OFFICES
NEW YORK CHICAGO BOSTON (MILLIS) ERIE BALTIMORE MOBILE

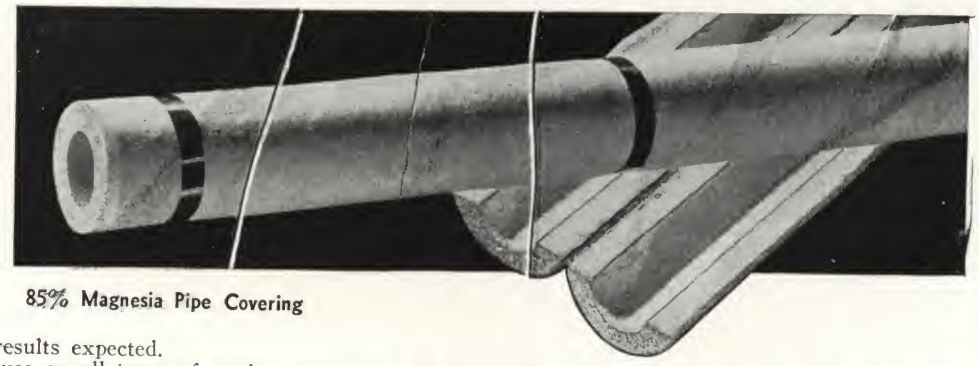
INSULATING PRODUCTS

85% Magnesia Pipe Coverings, Blocks, Sheets, Boiler Jackets, Insulating Cements, Rock Wool (Loose—Granulated—Bats), and General Asbestos Insulating Products.
For other Ruberoid Products, see File Index.

85% Magnesia for Medium and High Pressure Steam Lines

Ruberoid 85% Magnesia Insulating Products have grown in popularity because of their exceptionally high quality. Lightness in weight, exceptional insulation properties and sturdiness make this material a universal heat insulation for all temperatures up to 600° F.

Whether indoor or outdoor conditions prevail, Ruberoid 85% Magnesia can be specified with the assurance it will accomplish the results expected.



85% Magnesia Pipe Covering

85% Magnesia is universal in its use on all types of equipment. It is made to fit all sizes of pipe. Covered with either canvas for inside work or a waterproofing jacket for outside exposure; it is also furnished in flat or curved blocks for insulating irregular surfaces. It has excellent insulation value when it is applied in a plastic form.

PIPE COVERINGS FOR AIR CONDITIONING

Woolfelt Pipe Covering

Experience for over fifty years in the manufacturing of the basic felts that go into woolfelt pipe covering, provides the knowledge that makes Ruberoid insulations for cold water piping superior products. Their efficiency assures safety from condensation on pipes. Lightness in weight promotes ease of handling and quick application. The "Twin Purpose" liner allows universal application on either hot or cold water lines.

Furnished in either the new pyroxylin finish or with canvas jacket.

Woolfelt Pipe Covering

Air Cell

The most economical and practical insulation for domestic steam or hot water systems.

Made in 2, 3, and 4 ply—each ply ¼ in. thick. Furnished in either the new pyroxylin finish or with canvas jacket. Temperature limit 350° F.

Air Cell Pipe Insulation

PLASTIC INSULATIONS

Ruberoid-Watson offers a complete line of scientifically prepared insulating cements that trowel well and stick to surfaces with the minimum of shrinkage, and afford the maximum insulation efficiency. The asbestos used is mined from Ruberoid-owned mines, the largest mines of asbestos in the United States.

Grade 203—Used for finishing and roughing coats. Coverage 27 sq. ft. per 1-in. thickness per 100 lbs. Temperature limit 1000° F.

Grade A—Second only to Grade 203. Contains slightly shorter fibres. Covers 20 sq. ft. per 1-in. thickness per 100 lbs. Temperature limit 1000° F.

Grade 214—Particularly efficient to bind moulded insulations. Popular as a direct insulator over boilers, tanks, etc. 100 lbs. will cover 20 sq. ft. 1-in. thickness. Temperature limit 1000° F.

Grade 115—A competitive cement. Covers approx. 19 sq. ft. 1-in. thick, per 100 lbs. Temperature limit 1000° F.

Hard Finish—Made from long-fibred asbestos. A high quality protective finish coating over cement or insulating blocks. Hard glossy finish. May be painted. Temperature limit 1500° F.

85% Magnesia Cement—Offers high efficiency up to 600° F. when applied direct to heated surfaces. Should be covered with ¼-in. coating of Hard Finish. Spreads 40 sq. ft. per 100 lbs. 1-in. thickness.

PIPE COVERINGS FOR COLD WATER LINES
and Products for use as Heat Insulation and Fireproofing

Anti-sweat Pipe Covering

An economical yet efficient insulation for pipes conveying cold water.

Built of inner liner of asphalt-saturated asbestos paper, a half-inch of woolfelt, two layers of asphalt-saturated asbestos felt, another half-inch of woolfelt, with two outer layers of asphalt-saturated asbestos felts. Outer layer has flap extending over the longitudinal seam. 1-in. thickness and greater made in telescopic construction—sections are 3 ft. in length.

Asbestos Corrugated Paper

Made entirely from superior quality Asbestos felt paper—one side corrugated ¼-in. deep forming dead air spaces. A very flexible, efficient insulation for hot air pipes and ducts and for the manufacture of pipe coverings. Rolls contain 250 sq. ft. 36-in. wide. Shipping weight approximately 50 lbs.

Asbestos Millboard

A rigid type of asbestos board insulation that cuts or drills easily and takes and holds nails or screws. Will withstand temperatures to 1000° without smoking. Made with two finishes, standard and embossed. Write for table of sizes and weights.

Asbestos Paper

A paper that has strength and color when wet or dry. Contains no wood pulp, sulfites, newsprint, etc. Color is carefully maintained as near a blue-white cast as possible. Fire-resisting and practically indestructible. Rolls available in 18 in. x 36 in. widths, weighing 50 or 100 lbs. Thicknesses from 6 lbs. per 100 sq. ft. (.015 in.) up to and including ⅛ in.

Frost-proof Pipe Covering

Succeeding layers of cattle hair felt and woolfelt—with liner of asphalt-saturated woolfelt—tightly wrapped, provide an ingenious, highly efficient covering for cold water lines, drain pipes, etc., used to prevent freezing. For unusually severe conditions, obtainable also in telescopic construction or a built-up hair felt insulation. Canvas jacketed. Special weatherproof jacket for outdoor use, extra.

RESIDENTIAL INSULATION

Ru-ber-oid Rock Wool

Bats—Loose—Granulated

This indestructible wool is one of today's most efficient insulating materials. Absolutely fireproof, verminproof and inert toward moisture. Affords excellent sound-deadening and acoustical qualities.

RU-BER-OID Kraflined Rock Wool Bats are carefully fabricated. They are well tailored, uniform and easily handled. They are clean and sufficiently dense to prevent dusting and deterioration. Each bat is backed with a moisture-resistant paper that prevents the infiltration of vapor into the insulated space. Kraflined Bats provide "four flap" protection—each edge having an extension that allows adjoining bats to be covered preventing any exposed seam.

Recommended for all exposed spaces, such as sidewalls of new houses or under the roof, either in the roof rafters or the floor joist over the top floor ceiling. Bats without the Krafliner can be furnished if desired.

PACKAGES CONTAIN

Kraflined Standard Bat	15 in. x 23 in. x wall thickness	8 bats—19.16 sq. ft.	27 lbs.
Kraflined Demi-Bat	15 in. x 23 in. x 2 in. thick	12 bats—28.75 sq. ft.	30 lbs.
Kraflined Giant Bat	15 in. x 48 in. x wall thickness	5 bats—25 sq. ft.	45 lbs.
Kraflined Giant Demi-Bat.....	15 in. x 48 in. x 2 in. thick	8 bats—40 sq. ft.	45 lbs.

RU-BER-OID Wal-Pac Pads are insulating units 9 in. x 15 in. that can be fluffed up when applied to nearly fill the studding space. They are cheaper than Kraflined Bats are, do not have the protective vapor-resistant paper. Furnished in cartons weighing 25 lbs. containing 20 pads that should cover 20 sq. ft. area.

RU-BER-OID Loose and Granulated Rock Wool is also available. Furnished in paper bags containing 35 lbs. each.

Illustrations:
Top: Giant Bats RU-BER-OID *Rock Wool*
Below: RU-BER-OID *Air-Met Reflective Insulation*

Ru-ber-oid Air-Met

Air-Met Type IV is a reflective insulation consisting of two sheets of pure aluminum. Has 4 reflective surfaces, 4 air spaces, and 3 vapor barriers. Air-Met does a three-fold job —turns back 95% of the radiant heat striking its aluminum surfaces; the air cells retard heat losses by convection; its light weight reduces the loss by conduction to a minimum.

Air-Met Type II consists of one sheet of reflective aluminum, 4 air-spaces, plus a sheet of heavy vapor-proof paper. Slightly less efficient than Type IV—and less expensive—but meets the insulation needs of a great many buildings.

Both types are moisture and vermin-proof. Simple to apply. Made in folded strips, opening up like an accordian. Strips are 80 to 100 ft. long, with scale of feet and inches indicated. Flanges are readily tacked to the studs, joists or rafters.

Air-Met can be stocked in a small space. Cartons 8 x 18 x 31 in., weighing approximately 40 lbs., contain enough material for 500 sq. ft. of area. Twenty cartons provide the insulation coverage of a carload of rock wool. Its insulation value is equal to the best and satisfies the Government specifications, as well as meeting the thermal conductivity factors required by heating and air conditioning engineers and public utilities. Cost of application extremely low.

BAR-RAY PRODUCTS, INC.

X-Ray Building Specialties

TELEPHONE
SOuth 8-5252

209 Twenty-Fifth Street, BROOKLYN, N. Y.

AGENTS IN
PRINCIPAL CITIES

GENERAL DESCRIPTION OF BAR-RAY PRODUCTS

X-Ray protection is our exclusive business in which our experts are recognized authorities. We offer the services of our staff in the solution of any problem of X-ray protection.

We have a material and method to meet the requirements of the U. S. Bureau of Standards wherever X-Ray equipment or radium is used.

Bar-Ray Shades and Frames are used wherever it is necessary to exclude *all* light.

Bar-Ray Ventilators provide for maximum ventilation while preventing penetration of light.

Also other Special Devices to Bar X-rays and light rays.

SPECIFICATIONS FOR BAR-RAY PRODUCTS

Important Note

When specifying X-ray protective building materials, we advise that the name BAR-RAY PRODUCTS, INC., *be specifically mentioned. Thus you will be assured of the high standard of quality and the complete protection Bar-Ray materials afford.*

Bar-Ray Lead Insulated Partition Blocks

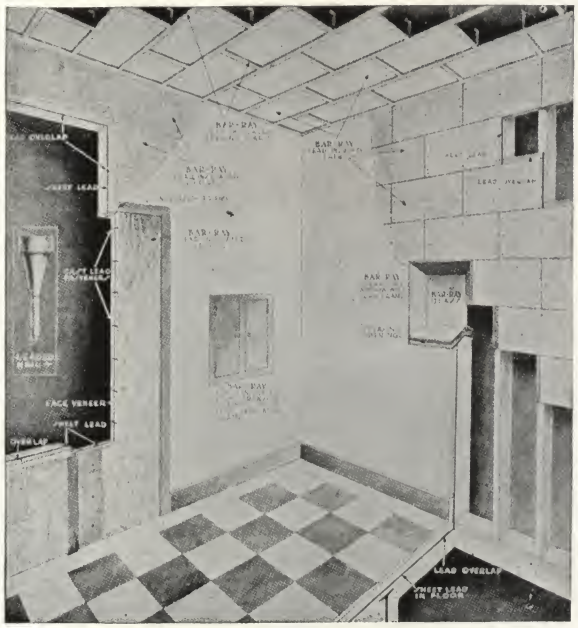
Walls indicated on plan to be lead insulated shall be built of cinder concrete blocks having an unpierced sheet of lead through center —— mm. thick. Blocks shall be 4x12x12 in. with sufficient number of half blocks for proper bonding of wall. Lead shall be exposed not less than 1½ in. on all four bearing sides to allow for lapping of lead on all adjoining blocks. *Anchors for holding cinder concrete to lead shall be cemented on.* Burning or soldering will not be permitted. Blocks shall be manufactured so that all or part of concrete on either side of lead can be removed to provide for mechanical lines without damaging sheet lead.

Lead Insulated Lath

Walls indicated on plan to be lead insulated shall be covered with plaster board lath 12x32 in. backed with unpierced sheet lead —— mm. thick. Lead shall extend beyond edge of plaster board 1 in. on top and one side for lapping lead on all adjoining sheets. Lead lath shall be applied to (studs) (furring strips) using special lead covered nails.

Lead Insulated Doors

Doors indicated on plan to be lead insulated, shall be flush type of size, thickness and finish as noted, and to have a continuous sheet of lead through center —— mm. thick. Cores with lead positioned between shall be held together with poured lead fasteners. Use of metal other than lead will not be permitted in the manufacture of these doors. Doors to have glass panels shall be cut at factory so that glass will properly lap and come in contact with lead; glass mouldings shall be provided. Doors will be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.



Lead Insulated Wainscot, Pilasters and Nails

Lead insulated wainscot, pilasters and lead covered nails shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Operators Window Frames of Lead

Operators window frames indicated on plan are to be made entirely of lead in one piece, and are to have a horizontal opening at bottom for voice transmission. They shall be splayed top, bottom and both sides to allow for a wide range of vision. Glass size to be 12x16 in. Frames are to be manufactured so that lead comes in contact with and laps glass 3/8 in. at all points. They shall be delivered to the job complete with glass mouldings of lead. Operators window frames shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Ventilators

Bar-Ray Ventilators 24 in. wide by 12x1⅜ in. shall be used where indicated on plan to prevent penetration of light. Where they are used in doors or walls having lead insulation, they shall be manufactured entirely of lead.

X-Ray Resisting Glass

It shall provide protection equivalent to thickness of lead in doors and where it is to be used.

Lead Insulated Film Transfer Cabinets

Where indicated on plan, film transfer cabinets will be installed complete. They shall have two compartments and be furnished complete with frames, doors and automatic locking devices.

Prepared Barium Plaster

Prepared barium plaster shall be as manufactured by BAR-RAY PRODUCTS, INC., of Brooklyn, N. Y., or equal approved in writing by the architect.

Light Proof Shades and Frames

Bar-Ray Shades and Frames shall be applied to all windows where indicated on plan. . . . All exposed metal parts shall be of galvanized steel with bronze color baked enamel finish. The roller tube shall be 1¼ in. in diameter and shall be equipped with a pear shaped groove running the entire length. The shade cloth shall be held in this groove by a metal spline. Any parts of the equipment should be built so that it can be removed and replaced without any damage to other parts. The cloth at top and bottom forming a loop for the spline SHOULD NOT BE SEWED AND SHALL BE FREE OF ALL STITCHING AND LIGHT HOLES.

The cloth shall be of substantial weight, built up with two layers of special fabric, thoroughly united and coated. Cloth shall be light proof, crack and fade proof, non-inflammable, odorless, dust free and hygienic. The material shall remain soft and pliable under all conditions of weather and climate.

The roller tube spring shall be heavy piano wire, so arranged that it will not warp under tension and shall have a heavy grease coat for protection from moisture.

All caulking must be installed so that it shall have sufficient body to stay in permanently. Assembly Boxes, Operating Bars, Disappearing Type Braces and Spring Locks shall be as manufactured by Bar-Ray Products, Incorporated, Brooklyn, N. Y., or equal approved in writing by the architect.

Hospitals with Bar-Ray Installations

Cornell Medical Center; Memorial Hospital; Bellevue Hospital. Pav. C & D; Harlem River Houses; *all of New York City.* Honolulu Hospital, *Honolulu;* Soldiers & Sailors Home, *Alaska;* Astoria Health Center, *Astoria, L. I.;* Hospital for Chronic Diseases, *Welfare Island, N. Y.;* Long Island College Hospital, *Brooklyn, N. Y.;* Middlesex General Hospital, *New Brunswick, N. J.;* Milford General Hospital, *Milford, Md.;* Oneida City Hospital, *Oneida, N. Y.;* St. Joseph's Hospital, *St. Louis, Mo.;* Western N. C. Sanitorium, *Black Mt., N. C.;* Veterans Administration Hospital, *Lakeland, Fla.;* Attica State Prison, *Attica, N. Y.;* Boston State Hospital *Boston, Mass.;* MacDonald College, *Quebec, Can.;* Brewster Hospital, *Jacksonville, Fla.;* Bucyrus City Hospital, *Bucyrus, Ohio;* Cantwell, Peterson Clinic *Shawano, Wis.;* Fall River General Hospital, *Fall River, Mass.;* U. S. Northeastern Penitentiary, *Lewisburg, Pa.;* Fort Bragg Hospital, *Fayetteville, N. C.;* Highland Hospital, *Oakland, Cal.;* Grace Hospital, *Banner Elk, N. C.;* Ionia State Hospital, *Ionia, Mich.;* Charlotte Hungerford Hospital, *Torrington, Conn.;* Lee County Hospital, *Sanford, N. C.;* Lewis County Hospital, *Lowville, N. Y.;* Los Angeles General Hospital, *Los Angeles, Cal.;* Nashville General Hospital, *Nashville, Tenn.;* U. S. Naval Air Station, *Sunnyvale, Cal.;* Quincy City Hospital, *Quincy, Mass.;* Roper Hospital, *Charleston, S. C.;* St. Peters Hospital, *Helena, Mont.;* Soldiers and Sailors Home, *Quincy, Ill.;* Sunnyview Sanitarium, *Winnebago, Wis.;* University of Pittsburgh *Pittsburgh, Pa.;* U. S. Hospital for Defective Delinquents, *Springfield, Mo.;* Valley View Sanitorium, *Paterson, N. J.;* Windham Community Hospital, *Willimantic, Conn.;* Baltimore City Hospital, *Baltimore, Md.;* Jewish Hospital, *Montreal, Can.;* Medium Security Prison *Walkill, N. Y.;* Montreal General Hospital, *Montreal, Can.;* Polyclinic Hospital, *Detroit, Mich.;* St. Luke's Hospital, *Bethlehem, Pa.;* and many others.

Architects Who Have Specified Bar-Ray Products

A. Manning Brown; Butler & Kohn; Clay & Corrigill; Crow, Lewis & Wick; Alfred Hopkins & Assoc.; J. Lustig; McKim Meade & White; C. B. Meyers; James Gamble Rogers; Starrett & Van Vleck; York & Sawyer; *all of New York City.* David McElroy, *Brooklyn, N. Y.;* Alex Merchant, *New Brunswick, N. J.;* Brown & Whiteside, *Wilmington, Del.;* M. L. & H. A. King, *Syracuse, N. Y.;* T. H. Buell, *Denver, Colo.;* Wm. H. Deitrick, *Raleigh, N. C.;* J. Herrick Hammond, *Chicago, Ill.;* Auler, Jensen & Brown, *Oshkosh, Wis.;* Palmer & Landin. *Baltimore, Md.;* J. Cecil McDougall, *Montreal, Can.;* William E. Haugaard, *Albany, N. Y.;* U. S. Navy Dept., *Washington, D. C.;* Asmus & Clark, *Nashville, Tenn.;* Lovelace & Spillman, *Bethlehem, Pa.;* Stevens & Lee, *Boston, Mass.;* Smith, Hinchman & Grylls, *Detroit, Mich.;* Kendall-Taylor, *Boston, Mass.;* Colton, Knecht, McCarty & Thebaud, *Grand Rapids, Mich.;* T. D. McLaughlin & Assoc., *Lima, Ohio;* Sloan & Robertson, *New York, N. Y.;* Coolidge, Shepley, Bullfinch & Abbott, *Boston, Mass.* Others on request.

Send for Complete Specifications

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- SECTION - 11

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SECTION 11

AMERICAN-FRANKLIN-OLEAN TILES

INCORPORATED

LANSDALE, PENNSYLVANIA

Joint Sales Company for

AMERICAN ENCAUSTIC TILING CO., Inc.
PERTH AMBOY, N. J.

FRANKLIN TILE COMPANY
LANSDALE, PA.

OLEAN TILE COMPANY
OLEAN, N. Y.

Most complete line of tile products in the industry—combines individual, complementary products of three well-known manufacturers who specialize in production of high-quality types of modern tiles.

Everything in Tiles

PRINCIPAL PRODUCTS

GLAZED INTERIOR TILES

Tiles, with impervious glazed surface on non-vitreous absorbent body, commonly known as wall tiles.

Trade Names—HERMOSA is the "American" name for this type of tile.

ENDURANCE is the "Franklin" name for the comparable product.

Uses—Interior installations, where easily cleaned, permanent and attractive wall surface is desired and where the tilework will not be subject to freezing temperatures in the presence of water or excess moisture, or to any other abnormal conditions. Recommended principally for walls in residential work, hotels, schools, hospitals and for bathrooms, showers and washrooms in any class of building.

Not suitable for floors.

Body—White, of special composition to insure purity of colors and carry glazes satisfactorily. Ribbed back designed to unite easily with setting bed and to eliminate air pockets.

Average absorption is between 13% and 15% to facilitate rapid installation and secure bond.

Glazes—Highest reputation for craze-resistance; far surpass in craze-resistance the tests established by Tile Industry Research Bureau. Hard glazes, therefore exceptionally resistant to scratching and wear.

Colors—Seventy harmonized colors regularly manufactured in analogous and contrasting series; modern hues and shades. Available with Bright or Mirror and Satin or Matt finish.

Color Charts:	Hermosa—	Brite and Satin	AE-10
	Endurance—	Velvetones	W-15
		Britetones	W-17

For reproduction of color charts see our Booklet 100. Samples of individual colors gladly sent on request.

Sizes—Two series of standardized sizes:

6 x 6 and smaller ⅜ in. thick	6 x 12 Series ½ in. thick
4¼ x 4¼ in.	6 x 12 in.
6 x 6 in.	6 x 9 in.
6 x 3 in.	6 x 6 in.
3 x 3 in.	6 x 3 in.
	3 x 3 in.

Cushion Edge—The flat units of this type are regularly furnished with scientifically designed cushion edge as originated by Franklin. This edge curves for approximately 3/16 in. from the edge of the face to a depth of approximately 1/32 in. Extensive research and experiment have demonstrated this ratio as most practical and effective.

Trim—Variety of bases, caps, door and window trim, curb and radius tiles with angles, corners and stops in the same colors as flat tiles. Separate trim for 6 x 6 and 6 x 12 Series. Trim is furnished cushion edge or square edge according to pattern and use.

Decorative Units — Extensive variety of plain colored, moulded, decalcomania, raised-line and hand-decorated strips, borders and hand-painted panels. Special decorative units or panels can be produced by one of several processes.

For principal decorative items see our Booklet 100.

GLAZED WEATHERPROOF TILES

Tiles made of ceramic materials with impervious glaze fused on a body of low absorption and considerable tensile strength. The term "weatherproof," as used to designate this type of tile, means that representative samples will withstand the thermal shock and freezing tests established by the Tile Industry Research Bureau without disintegration of the tile.

Trade Names—PERMATILE is the name of the "American" product.

GLAZEDVITRES is the name of the "Franklin" product.

Uses—May be used in any location, but intended for exterior work and for interior installations involving exposure to temperature changes and physical strains. Originally developed for tiling of Holland Tunnel and since greatly improved. Principally used for subways, industrial plants, store fronts. With matt and satin glazes, it has found wide application for floors subject to moderate foot traffic.

Body—White, similar to vitrified china, with a body absorption of less than 5%. For special purposes and for meeting unusual conditions, the degree of absorption can be reduced to suit requirements.

Regularly furnished with deeply ribbed back.

Clincher Back—For ceiling work and locations where vibration and other special conditions are encountered, this tile can be furnished with a dovetail clincher back to provide a firm mechanical bond in addition to usual cementitious bond.

Glazes and Colors—Same as HERMOSA and ENDURANCE; see above. Weatherproof and Interior Tiles in the same glaze color are thus obtainable where difference in requirements on the same project makes this desirable. This feature is of importance in many industrial buildings having cooling, steam or hot rooms, as breweries, dairies, bakeries and bottling works.

Sizes—Standard sizes are:

4¼ x 4¼ in. and 3 x 3 in.
4¼ in. Octagon; 4 in. Hexagon } 7/16 in. thick
2 in. Hexagon

Edge—The square tiles are regularly furnished with cushion edge; the Octagon and Hexagon for floor use are made with square edge only.

Trim—Trim shapes same as for Glazed Interior Tiles insofar as they work with above flat sizes.

Decorative Units—Faience borders, inserts, panels in great variety; see "Faience" on following page.

FAIENCE AND FAIENCE MOSAIC

Tiles with impervious, heavily glazed face fused on a dense body made from clays and other ceramic ingredients in the plastic state; characterized by relatively rugged, hand-made appearance.

Trade Names—FRANKLIN FAIENCE, large units, 7/16 in. thick. FRANKLIN FAIENCE MOSAIC, ¼ in. thick less than 6 sq. ins. facial area.

Uses—Broadest architectural application for plain or decorated interior or exterior wall surfaces in all types of buildings, in patios and gardens. The matt finish tiles can be used for floors in homes, except in kitchens, if subject to light foot traffic.

Body—Buff, hand-moulded or pressed, formed from plastic clays, dense; "weatherproof." Average absorption less than 7%; hand-finished back.

Glazes and Colors—Unusually hard as result of firing at high temperatures. Sixty special glaze colors in graduated, harmonizing series to satisfy all usual decorative needs. Bright, matt and crystalline finish. Color Charts: 30 and 31. Samples of individual colors and sketches on sizable projects gladly furnished.

Sizes—Faience, 7/16 in. thick: 30 trade sizes ranging from 2 x 2 to 9 x 9 in. in integrating series based on 6 x 6 in., and 4¼ x 4¼ in. units; also Octagons and Hexagons of various sizes.
Faience Mosaic, ¼ in. thick: 2 x 2, 2 x 1, 1 x 1 in., 2 in. hexagon and 3 in. hexagon (mounted on paper).

Edge—All square and oblong sizes have cushion edge. Hexagons, octagons, decorated units and panels have square edge.

Trim—Full complements of standard bases, caps, mouldings, consoles, shelves, stair treads and risers. Special trim shapes can be made at extra cost.

Decorative Units—Widest variety of borders, inserts and panels in natural, geometric, period, symbolic or emblematic motifs; nursery rhymes, zodiac, sports, ecclesiastical and many other subject inserts in series. Specials made to order.

Specialties—Fountains and unique bowls and spouts; mantels; grilles; baptismal fonts, swimming pool gutters, etc.

BATHROOM ACCESSORIES

Vitrified china type; dense, pressed body, not cast; unsurpassed quality; exceptionally strong; graceful and practical in design. Available in HERMOSA, ENDURANCE, RIPPLE and FAIENCE glazes.

LARGE UNIT TILE

Recently perfected vitreous, unglazed type of tile in larger than traditional trade sizes. Made under exclusive formula; readily identified by size, color effects, and finish; unlike any other type of tile.

Trade Name—TERRA VITRA; a Franklin product.

Uses—Interior or exterior wall and floor surfaces, store fronts, terraces, deck roofs, where scale of area makes large units desirable.

Body—Vitreous; "weatherproof;" gradated density from zero absorption at face to not more than 2% at back, thus providing extreme wear resistance on face and proper bonding surface at back. Natural non-slip finish. Ribbed type of back.

Colors—Twenty-five soft, clear colors in speckled effects; translucent quality. Color Chart: TV-1.

Sizes—Range of basic and integrating sizes progressing from a 6 in. square with allowance of a ¼ in. joints up to 12¼ x 12¼ in.; also unrelated shapes, such as octagons, hexagons, etc.

Edge—Cushion edge.

Trim—Bases, caps, curb tile, thresholds, plinths, etc.

Decorative Units—Geometric motifs, embossed inserts and borders.

CERAMIC MOSAIC AND PAVERS

One of the broadest lines of unglazed products in the industry with the highest reputation for excellence in non-staining qualities, wear-resistance, color and surface perfection.

Trade Names—OLEAN CERAMIC MOSAIC; OLEAN PAVERS; SHADOWFLASH; TEXTONE; VARITONE.

Ceramic Mosaic—Units ¼ in. thick. Two types. Both standard and original, modern patterns in small or large scale to suit requirements. Mounted on paper in sheets approximately 2 x 1 ft. for convenience and speed in installation.

Pavers—Units ½ or ⅝ in. thick, depending on size and body type. Two types. Porcelain type known as "Flint Tiles." The body materials and colors are the same as those of Ceramic Mosaic. Pavers are usually installed piece by piece and therefore furnished loose.

Sizes—

CERAMIC MOSAIC:

1-1/16 x 2-3/16 in. Series		¾ x 1-9/16 in. Series	
1-1/16 in.	Square	¾ in.	Square
1-1/16 x 2-3/16 in.	Oblong	¾ x 1-9/16 in.	Oblong
2-3/16 in.	Square	1-9/16 in.	Square
2-3/16 in.	Pentagon	11/32 in.	
½ x 1-1/16 in. Series		Unrelated	
¼ in.	Square	1 in.	Hexagon
½ x 1-1/16 in.	Oblong	1-1/4 in.	Hexagon
1-1/16 in	Square	2 in.	Hexagon
		2-3/16 in.	Octagon
		Combines with ¾ in. square dots	

PAVERS

2⅞ in.	Square	2⅞ x 6 in.	Oblong
4¼ in.	Square	6 x 9⅛ in.	Oblong
6 in.	Square	2 in.	Hexagon

Trimmers—Coves, beads, bases, caps, nosings, stair treads, thresholds, plinths, with angles and corners for each series of sizes.

Decorative Units—Borders, geometric motifs, inserts, glazed tesserae, emblems, trade marks, lettering, etc. Cut mosaic treatments of any subject.

Porcelain Type

Uses—Bathrooms, showers, toilets, kitchens, smoking rooms, corridors, swimming pools, restaurants, food stores, hospitals.

Body—Made from refined clay mixtures and other ceramic ingredients; body colors produced by ceramic stains; thoroughly vitrified and wear-resistant; characterized by fine-grained, non-marring surface. Absorption less than ½ of 1%.

Colors—Twenty-one rich, solid colors and pastel shades; 3 granite effects; 6 "Shadowflash" colors (distinctive colors with the appearance of having been mellowed by age—available in ceramic mosaic only); also harmonious blends. Color Chart: AC-50.

Edge—Ceramic mosaic square edge only. Pavers heavily fettled.

Natural Clay Type

Uses — Every field — including living rooms, vestibules, porches, sunrooms, wainscots and floors in schools, office buildings, institutions, natatoriums—wherever pleasant under-foot and non-slip properties are desired.

Body—Made from choice, unwashed clays, characterized by relatively rugged appearance of surface; has definite non-slip properties. Average absorption not more than 2%.

Colors—Variegated and textured tones of natural buffs, browns, reds, purples, gray and black; ceramic stains used only in blue and green parts of palette. Especially serviceable where foot traffic soils ordinary floors. Color Charts: AC-50, AC-40.

Edge—Cushion edge in 1-1/16 and 2-3/16 in. squares, 1-1/16 x 2-3/16 in. oblong and 2-3/16 in. pentagon. All sizes available in square edge. Pavers heavily fettled.

Carbo Non-slip

Any sizes and colors of our Porcelain and Natural Clay Type bodies are manufactured on sizable order with abrasive grain incorporated throughout. White Carbo stocked in all ceramic mosaic sizes; colored Carbo stocked in ¾ in. squares.

Glazed Ceramic Mosaic

Twenty-six hard-burned glaze colors, applied to porcelain bodies of similar colors. Available in all ceramic mosaic sizes for accents in unglazed fields and for wall enrichment.

MEMORANDA

B. MIFFLIN HOOD COMPANY

Manufacturers of Floor and Wall Tile

ATLANTA, GA.
TELEPHONE, Hemlock 2252

CHARLOTTE, N. C.
TELEPHONE 3-1559

PLANTS: DAISY, TENN. and NORWOOD, N. C.

BRANCHES AND REPRESENTATIVES

ATLANTA, GA., B. Mifflin Hood Co., 686 Greenwood Avenue, N. E.
BOSTON, MASS., S. I. Frank, 21 Little Building, 80 Boylston Street
CHARLOTTE, N. C., 117 Bldg's Building
CLEVELAND, OHIO, A. D. Land, Box 28, Garrettsville, Ohio
CHICAGO, ILL., W. M. Sullivan, 525 W. Roosevelt Road, Canal Station
DETROIT, MICH., Ira C. Preston, 9235 Agnes Avenue
KANSAS CITY, MO., W. D. English, 3318 Benton Boulevard
MIAMI, FLA., W. H. Burkhart, 1150 So. Miami Avenue
NEW YORK, N. Y., C. H. Vanderlaan, Inc., 103 Park Avenue
PHILADELPHIA, PA., W. Douglas Hood, DeLong Bldg.
PITTSBURGH, PA., Raymond Cox, Box 494, Beaver Falls, Pa.
TAMPA, FLA., W. G. Holly, 3315 McKay Avenue
WHEELING, W. VA., Wheeling Tile Co.

Product

HOOD'S FLOOR TILE.

For our Roof Tile page, see File Index.

Quality

Hood's tile is made from pulverized pottery, blended with high grade clay and shales.

DATA CHART—FLOOR TILE

Square		Rectangle		Triangle	
Size, in.	Thickness, in.	Size, in.	Thickness, in.	Size, in.	Thickness, in.
9 x9	¾	12x5¾	1	9 x9	¾
8 x8	¾ and 2	8x4	1½	8 x8	¾ and 2
6 x6	¾ and 2	8x3¾	¾	6 x6	¾ and 2
4 x4	½, ¾ and 2	6x9	¾	4 x4	¾ and 2
3¾x3¾	¾	6x3	½	3¾x3¾	¾
3 x3	½ and ¾	6x2¾	¾	2¾x2¾	¾
2¾x2¾	¾	6x2¼	1		
2¼x2¼	1	8x2¼	1	End Angles	
1⅝x1⅝	¾	4x2¼	1		
Diamond 7x12x¾		6-in. hexagon x ¾-in. thickness. 8x4-in. elongated hexagon in ¾-in. thickness.		8 x3¾	¾
				6 x2¾	¾

Specials: Bullnose one side, bullnose two sides, roll and square top cove, base, internal and external angles, also wainscot fittings, etc., to match. Also 6x6x1½ bullnose steptreads.

Colors

Hoodbuff Tiles—Include a full range of natural colors from a light buff through intermediate tones of golden buffs, tans and to an occasional warm brown or extremely dark tan.

Hoodgray Tiles—Run in a varying range of gray tones and here and there an almost invisible spot of warm tan showing. This comes out just enough to give the floor warmth, but not enough to be noticeable. This color range is suitable for the more formal floors.

Pyro-Tynt Quarries—Include a full range of natural fireflashed shades in a random range, from slight flashed reds to deep greenish-bronze. The gradation of color and spotting is absolutely at random and no attempt can be made to sort for any particular color effect. For an extreme range of colors mingle Pyro-Tynt with the lighter buff shades of the Aragon Tile.

Aragon Quarries—Include a range of shades from a light cream buff through the solid pinkish tones, to darker tans and speckled russets, with an occasional purplish-brown tone. An extremely wide range can be effected by a mixture with the Pyro-Tynt Tiles, which will give a range from light cream buffs to dark greenish and purplish bronze.

Welsh Red—Light red tones, varying slightly.

English Red—Medium red tones, varying slightly.

Venetian Red—Dark red, as near uniform as possible in quarries.

Grades

Perfected—Carborundum ground after firing, on all edges to produce true dimensions and straight edges, permitting string line fine joints.

Standard—Represents the standard of Hood's manufacture, reasonably true and uniform.

Seconds—A good quality of tile with minor imperfections and defects.

Rubble Random—Tile of odd and irregular shapes possessing exceptional color value resembling autumn foliage. Comes in uniform thickness. Many artistic settings are made with Rubble Random.

Hood's "Quaramics"

"Quaramics" are mounted on paper sheets of approximately 2 sq. ft. each for shipping and setting. They are furnished in many harmonious and contrasting patterns. They are what is known as a plastic stiff mud tile as distinctive from the dry dust pressed.

¼ in. Thickness

2⅛x2⅛
2⅛x1 1/32
1 1/32x1 1/32

Triangles in 1 in. and 2 in. units

Cove Base and Cap in 1 in. and 2 in. units

Manufactured in quarry materials and colors, including green, blue and black.

Note: Special patterns designed by the architect will be mounted and furnished for slight additional cost. Sample boards cheerfully furnished on request.

Hood's Alluvial Clay Tiles

Hand-made, natural, restful, not glazed or metallic, human and artistic.

Sizes—From 2 in. x 2 in. through 12 in. x 12 in., including rectangles, triangles, hexagonal and special shapes. Tailored for individual jobs to meet specifications.

Colors—Alluvial clay tiles run in a range of light salmon reds, tans and pinks with all intermediate tones.

Hood's Cla-Slab Garden Blocks

Hand-made in sanded slop mould, with weathered edges and surfaces. Colors are natural burned clay.

Sizes—(1½ in. thick) 5½x5½, 5½x12, 5½x18½, 8¾x12, 12x12 and 12x18½ in. (to use a 1-in. joint when laid in ashlar pattern). We will be glad to make other special sizes to order.

Hand Fettled Pavers

Edges rounded by hand giving irregular hand-made effects. Furnished in all colors except uniform red.

Shapes

Special shapes, other than stock specials, will be executed in accordance with the architect's designs.

Samples

Samples and literature gladly sent on request.

KRAFTILE COMPANY

FACTORY AND MAIN OFFICE: NILES, CALIFORNIA

SALES AND DISPLAY OFFICE: 525 MARKET STREET, SAN FRANCISCO, CALIFORNIA

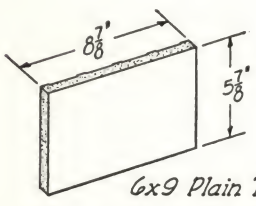
SALES REPRESENTATIVES

SAN FRANCISCO, CALIF., Alexander E. Larson, 525 Market St.
ST. LOUIS, MO., The Coates Co., 4030 Manchester
KANSAS CITY, MO., The Coates Co., 1200 Oak Street
AUSTIN, TEX., The Coates Co., 1414 Preston
OMAHA, NEB., The Coates Co., 915 City Nat'l Bank Bldg.
CHICAGO, ILL., Tile Craft Contractors, 450 E. Illinois St.
WASHINGTON, D. C., H. J. Schlee, 807 Chandler Bldg.
NEW YORK, N. Y., Alex O'Hare, 40 Worth St.

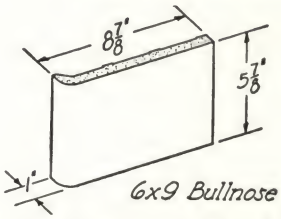
GLAZED TILE AND TERRA COTTA PRODUCTS FOR ALL TYPES OF EXTERIOR AND INTERIOR WALL SURFACES

Master Kraftile
Swimming Pool Overflow Gutters
Swimming Pool Ladder Steps
Terra Cotta Wall Units
Ceramic Facings
Special Shapes
Enameled Brick
Bathroom Accessories
Quarry Tile

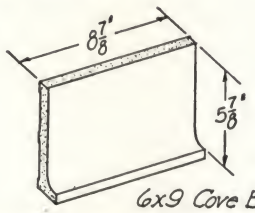
MASTER KRAFTILE 6 x 9's



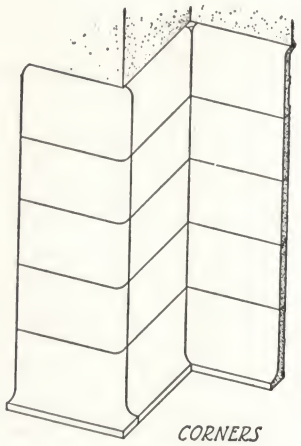
6x9 Plain Tile



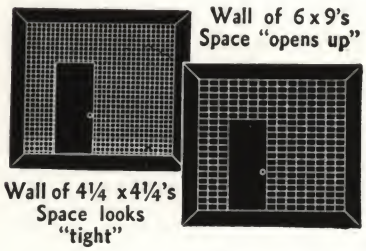
6x9 Bullnose



6x9 Cove Base


CORNERS

This modern tile is made of selected clays, formed by extrusion under vacuum. Edges are straight and square. Backs are roughened to provide perfect adhesion with mortar. Body and glaze high fired at No. 8 pyrometric cone temperature of 2354 deg. F. Glaze is acid resisting and resists scratching by a steel knife. Wide variety of colors. Installed at same cost and by same method as ordinary glazed tile.



HOW MASTER KRAFTILE 6 x 9's "OPEN UP" SMALL WALL AREAS

This interesting variation from the old conventional 4¼"x4¼" tile "opens up" small wall areas—makes them look higher or wider according to the way the tile is set. Master Kraftile is architecturally correct in size . . . one and one-half times longer than its width. It can be installed at the same price as ordinary tile.

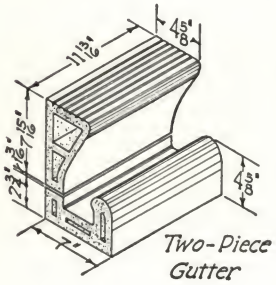
ENAMELED BRICK

Of same high quality as all Kraftile. Carefully graded, precision-sized. Will be made to order in any glaze color. All standard brick shapes manufactured.

VITREOUS QUARRY TILE

Precision-sized vitreous 8" x 8" tile available in attractive autumn-red. Stone-hard, measures less than 2% absorption. Patio tile is red hard-burned. 12" x 12".

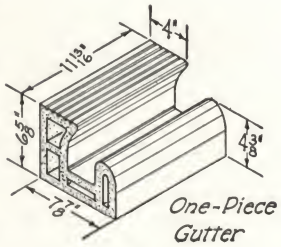
SWIMMING POOL OVERFLOW GUTTERS AND STEPS



Two-Piece Gutter

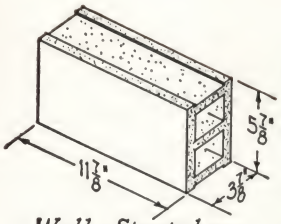
Both One- and Two-Piece Overflow Gutters are glazed terra cotta, machine extruded, two standard types. Ends sized true and square with face. Set with 3/16" joint, resulting in a minimum joint area. Top corrugated for non-slip. Glaze on tops contains a non-skid grit if specified. Made in standard length of 11 3/16". Mitred pieces furnished to form 90 deg. corners. Gutter is cut out to receive drain outlets. All plain glaze colors available. Most sanitary pool gutter obtainable. Will not deteriorate.

Recessed Ladder Steps are manufactured in pairs—2 pieces for each complete step.



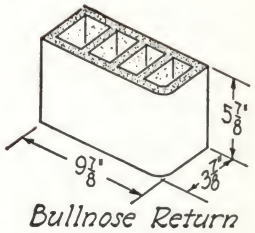
One-Piece Gutter

GLAZED TERRA COTTA WALL UNITS



Wall Stretcher

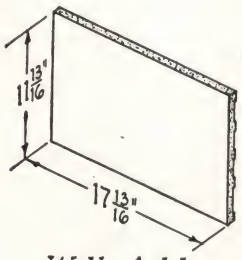
Partition wall and finish of one material erected by one craft. Surfaces will not stain, are impervious and non-absorptive, easily cleaned. Cannot loosen and do not depend on adhesion to a structural wall for support. Fireproof. *Precision sizing* makes perfection of installations. Available in wide variety of colors. Standard sizes and shapes in thicknesses of 2″ (for furring), 3″, 4″, and 4⅝″ can be used to build any wall and may be reinforced for earthquake resistance to surpass California State Code requirements. Price compares favorably with ordinary enameled hollow tile.



Bullnose Return

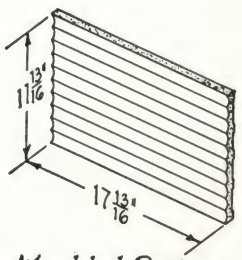
Having "pioneered" the development of these modern, structural units, KRAFTILE COMPANY, a member of the Clay Products Institute, is eager to supplement this material with the firsthand experience which the Engineering and Design Department has gained. Today there are Kraftile Terra Cotta Wall Unit installations in 21 of the States and Canada—schools, hospitals, food products plants, laboratories, dairies and public buildings.

CERAMIC FACING



Wall Ashlar

For architectural treatment of exterior facings. Specially made for installation by adhesion method. Available in sizes from 8″ x 12″ to 12″ x 24″ with ¾″ thickness. Units may be easily cut on the job with an ordinary carborundum saw. Many modern and novel designs can be developed. Shear tests show an unusual bond to mortar. Glaze hardness equal to No. 6 on Mohs' scale due to high firing. Freezing and acid tests showed no disintegration or failure.



Moulded Patterns

10 POINTS TO REMEMBER ABOUT KRAFTILE

1. Meets Each Construction Problem

There is a glazed Kraftile product to meet each of your construction problems.

2. Exceptionally Hard and Durable Glazes

Tests show even a mineral having the hardness of feldspar will not mar Kraftile glazes.

3. Beautiful Glaze Colors

Kraftile is available in a wide range of beautiful, permanent glaze colors.

4. Higher Fired Than Most Terra Cotta

Kraftile body and glaze is higher fired than most terra cotta—at pyrometric cone No. 8 or 2354° F.

5. Precision-Made Clay Products

Kraftile has "pioneered" precision-made glazed clay products.

6. One Source for All Needs

The complete Kraftile line insures the architect the same quality, type and texture of glazed products for the entire building.

7. Unusual Affinity for Mortar

When properly set, Kraftile can never be loosened or separated clean from good quality mortar.

8. Chosen By Architects

Kraftile is used in all types of construction—schools, hospitals, dairies, public buildings, residences, etc.

9. Car Tunnel Kiln Fired

Firing is strictly controlled, using the latest design car tunnel kiln.

10. Engineering and Interior Decoration Staffs at Your Service

The engineering, drafting, and designing departments of the KRAFTILE COMPANY are at your service. Let us aid you in your construction, estimating and decorating problems. And advise you in the economical use of glazed products.

HIGH FIRED
Kraftile
THE TERRA COTTA WITH THE 10 ADVANTAGES

For complete details, specifications, samples or firsthand information write or phone KRAFTILE COMPANY, *Niles, California. Or Sales Office, 525 Market St., DOuglas 5648, San Francisco, or our nearest Sales Representative. See list on preceding page.*

MURRAY TILE COMPANY

INCORPORATED

Manufacturers of Quarry Floor, Wall Tile and Roofing Tile

CLOVERPORT, KENTUCKY

SALES REPRESENTATIVES

CHARLOTTE, N. C., E. V. Garraux, 2008 Greenway St.
CHICAGO, ILL., Jos. A. D'Eath, 325 W. Ohio St.
DALLAS, TEX., R. M. Jacks, 403 Construction Bldg.
DETROIT, MICH., C. F. Beckwith, 506 Architects Bldg.
INDEPENDENCE, MO., E. C. Lefman, P. O. Box 13, 11521 Winner Rd.
LOS ANGELES, CAL., Cambridge Tile Mfg. Co., 910 No. Orange Dr.
MIAMI, FLA., H. J. Pilliod, 101 N. E. 25th St.
NEW YORK, N. Y., C. H. Vanderlaan, Inc., 103 Park Ave.
PHILADELPHIA, PA., William E. Buehler, Jr., 411 W. Price St., Germantown
SAN FRANCISCO, CAL., Cambridge Tile Mfg. Co., 1155 Harrison St.

PRODUCTS

QUARRY TILE and Necessary Trim for Floors, Wainscots, Stair Treads and Risers, Thresholds, Window Stools and Plinths.

HEAVY DUTY QUARRIES for Packing Houses, Dairies, etc.

ROOFING TILE: Spanish Roll, Mission, and Flat Slab Shingles in various types and textures. (For Roofing Tile, see File Index.)

MURTICO QUARRY TILES

For over thirty years a standard of quality, Murtico tiles are made from mixtures of the finest shale, expertly blended for color harmony. Though the texture and tones are restful and soft in appearance, the body is extremely dense and thoroughly hard burned so as to withstand heavy traffic and hard wear. Furnished in solid shades of buff, gray, chocolate brown, English Red, Tuscan red, and black. Also in pleasing blends of fire tinted shades from light buff into warm shades of biscuit tans, light and dark tan, soft toned fireflashed reds and into deep browns, bluish purple and gunmetal hues.

Though made primarily for artistic effects, the hard vitreous body and smooth surface make MURTICO QUARRIES ideal for floors and wainscots in hospitals, dairies, schools, and other institutions where sanitation and long wear are essential, as well as for residential work.

Samples and catalogs sent cheerfully upon request.

It is necessary that experienced workers be used for all installations to secure the most complete satisfaction. Therefore, MURTICO QUARRY TILES are marketed only through responsible tile contractors. The nearest responsible contractor can furnish samples and estimates of cost, or we will be pleased to submit samples direct and have quotations furnished when requested.

DESCRIPTION OF COLORS

Golden Glow—Variegated blends of light buff, tan, orange and brown in many degrees of shading.

Brown Blend—Variegated shades of dark tan, reddish brown, seal brown and olive brown.

Sunburst—Variegated red, brown and gunmetal shades with variation in blend on each individual tile.

Chocolate Brown—A very rich medium shade of chocolate brown.

English Red—An attractive, vivid, cherry red, bright and stimulating.

Buff—A soft creamy color with slight variation in shade.

Tuscan Red—This color is deep and lustrous, darker than English Red and with a reddish-brown tone.

Gray—Soft light tones with sufficient variations to prevent monotony.

TILE SIZES

1¾"x1¾"x½"
1¾"x4"x½"
3"x3"x½"
3"x6"x½"
4"x4"x½"
1"x1"x¾"
1¾"x1¾"x¾"
1¾"x4"x¾"
2¾"x2¾"x¾"
2¾"x6"x¾"
4"x4"x¾"
4"x8"x¾"
4½"x6"x¾"
6"x6"x¾"
6"x9"x¾"
8"x8"x¾"
9"x9"x⅞"
5¾"x5¾"x1"
5¾"x12"x1"
12"x12"x1"
4"x8¼"x¾" Elongated, Hexagons and Halves
6" Hexagons and Halves
9" Hexagons and Halves
2¼"x8"x¾" Brickettes
4"x8"x1⅜" Heavy Duty Packing House Quarry

Cove Base—2⅜" high over all, 6" wide; 4¾" high over all, 4" wide; 4¾" high over all, 6" high over all, 6" wide; 6" high over all, 9" wide. All sizes in Round Top No. 94 and Square Top No. 97.

Cove Base Angles and Stops—Internal and External in various heights and widths—¾" and 2¼" radius.

Bullnose—Same sizes as square and oblong plain tile—all sizes No. 88.

Stair Tread—No. 40, 6"x6"x1¼"; No. 49, 6"x12"x1¼", 12" nosing; No. 50, 6"x12"x1¼", 6" nosing; No. 101, 9"x10¼"x1¼".

Stair Tread Corners—No. 41, 6"x6"x1¼"; No. 51, 6"x12"x1¼".

Stair Risers—No. 104, 9"x6¼"x1¼".

Thresholds—No. 105, 6"x5"x1⅛"x1¼".

Window Stools—No. 106, 4¼"x6"x1½".

Window Stool Return—No. 106X, 4¼"x6"x1½".

Wainscot Cap—No. 133, 2"x6"; No. 98, 4½"x6".

Wainscot Cap Angles and Stops—Internal and External in various heights and widths—¾" and 2¼" radius.

Wainscot Angles and Stops—Internal and External in various heights and widths—¾" and 2¼" radius.

Plinth Blocks—No. 93, 6"x5½" Beveled; No. 93-X, 6"x4½" Flat.

Catalog No. 105

HAND BOOK OF

MOSAIC

CLAY-TILES

THE MOSAIC TILE COMPANY
ZANESVILLE • OHIO

THE CARLYLE TILE COMPANY • IRONTON • OHIO

DESCRIPTION OF MOSAIC PRODUCTS

Clay Tile For All Architectural and Decorative Purposes

ALL-TILE ACCESSORIES

BATHROOM FIXTURES in all standard shapes and sizes are available in Satin Matt and Mozane Enamel glazes as well as Swan White. Complete sets can be had in units to fit either 4¼" x 4¼" or 6" x 6" tile wainscotes. Several items are manufactured with a dowel-type back.

BLUESTONE

BLUESTONE, a plastic-made unglazed type of tile — highly vitrified — made only in a blend of gray blues — non-slip surface — sizes from 12" x 12" downward to 1" x 1" — excellent floor material — entirely weatherproof, can be used for exterior or interior installations.

CARLYLE QUARRIES

CARLYLE QUARRIES are machine made from plastic natural clays by de-airing and extrusion processes. They represent the highest refinements of natural clays and are vitrified. Improved methods of flashing make possible a wide variety of beautiful colors which can be arranged to meet any architectural and decorating requirement. See pages 31 to 34 inclusive.

CERAMIC MOSAICS

CERAMIC MOSAICS designate an unglazed, colored clay type of tile which is available in small sizes up to 2 3/16" squares — mounted approximately two square feet to a sheet of paper — same color throughout thickness of tile — vitreous and semi-vitreous colors — ¼" thickness — square edges only.

ABRASIVE NON-SLIP ceramic mosaics are the same as above with an abrasive aggregate added — actual color of the clay not affected, the chief difference is appearance of tile made by minute bits of dark aggregate — stock sizes ¾" x ¾" and 1 1/16" x 1 1/16" only.

VELVETEX is ceramic mosaics and made to the same specifications except for a stippled color throughout rather than a solid plain color.

GRANITEX is ceramic mosaics and made to the same general specifications. It is a natural clay type with flecked color throughout — unglazed non-slip surface — standard sizes, 1 1/16" x 1 1/16", 1 1/16" x 2 3/16", 2 3/16" x 2 3/16" and 2 3/16" pentagons. Square edge and cushion edge.

ALL CERAMIC MOSAICS above are strictly weatherproof and can be used for either exterior or interior installations — suitable for floors, wainscotes, stairs, pools and many related areas — see pages 20 to 24, 26, 27 and 30.

DECORATED STRIPS, INSERTS AND PANELS

INLAY DECORATED STRIPS are available in a wide variety of standard color combinations. Not all glazes can be used together in decoration since there are many maturing temperatures represented in the line. See page 18.

MOZANE DECORATED STRIPS are available in only the patterns and combinations shown on page 18.

MURATILE is a process with limitations. Standard patterns for strips, inserts and panels are shown on pages 18 and 19. Special designs are made only when a large order of the same pattern is required.

FAIENCE

FAIENCE, a plastic hand-made type of tile — red body except when certain glazes and special size units require a buff body — vitrified and weatherproof for exterior or interior use. Standard sizes, from 12" x 12" downward to 1" x 1", standard thickness ⅝" — in addition to square units standard items include octagons, hexagons, elongated hexagons, pentagons, fish scales and many other shapes.

SPECIAL SIZES AND SHAPES in Faience are given particular attention. Estimates on all special work cheerfully furnished.

USES for Faience are — wainscoting, in-doors or out — floors, only where there is light traffic because glazed faience will become marred under heavy use — as decorative panels or plaques — store fronts and building exteriors — fountains, mantels and pools.

GLAZES vary in type, each glaze is classified according to its opacity; finish, whether matt, semi-matt or high gloss; and certain other characteristics. Not all glazes can be fired together in decorated items nor can all glazes be used on high relief or molded pieces with the same effect as would be achieved on a flat tile. Glazes vary from time to time and if a specific shade is desired current samples should be consulted, otherwise we do not assume the responsibility for providing the correct shade.

FLINT FLOOR TILE AND PAVERS

FLINT FLOOR TILE, also known as Ohio Flint, is an unglazed, vitreous or semi-vitreous, heavy duty floor tile; available in all standard sizes including the popular 4¼" x 4¼" and 6" x 6" units — can be used for exterior as well as interior work — see page 25. Thickness, ⅝" to ¾".

GLINT TILE

GLINT TILE IN RED SEMI-VITREOUS BODY is weather-proof, which accounts for its popularity as a store front decorative item. For patterns and sizes see page 28.

GLINT TILE IN WALL TILE BODY is not weatherproof, and should not be used for exterior installations. Available in all colors — can be used as solid pattern or as feature with Satin Matt or Mozane Enamel Wall Tile. See pages 12, 15 and 24.

GRANITEX

GRANITEX CERAMICS are listed under Ceramic Mosaics above. Granitex Pavers are also available in 4¼" x 4¼", 6" x 6" and other standard sizes under Flint Floor Tiles and Semi-Vitreous floor tile.

IRONSTONE

IRONSTONE, a plastic-made, unglazed tile — strictly weatherproof — made only in a blend of natural clay colors, buffs and salmons — sizes from 1" x 1" to 12" x 12" — excellent for floors — makes beautiful wainscote in combination with glazed faience.

VITREOUS AND SEMI-VITREOUS FLOOR TILE

VITREOUS AND SEMI-VITREOUS FLOOR TILE is the same type as Flint Floor tile in sizes up to 3" x 3" units. Thickness 7/16" to ½".

VITROMAT

VITROMAT AND SEMI-VITROMAT are terms used to indicate the type of tile achieved by the application of Satin Matt or Mozane Enamel wall tile glazes to either white vitreous or red semi-vitreous body. Some glazes behave equally well on either body, others can be fired on only one body for various reasons. We reserve the right to reject and offer alternatives to all orders for impractical combinations of glaze and body.

WALL TILE

WALL TILE suggests ordinarily one of two types, Satin Matt or Mozane Bright Enamel. Regular wall tile body is a white dust pressed, non-vitreous bisque — ⅜" or ½" thick, depending upon size and shape. Unsuited for exterior work since it is not weatherproof.

THE MOSAIC TILE CO.

MOSAIC

ARCHITECTURAL DESIGNING SERVICE

A complete design service is available to all architects desiring colored sketches, working drawings, full-size details or preliminary studies. Designers, familiar both with tile and architectural requirements, are equipped to offer suggestions or interpret faithfully the architect's ideas. This service is given cheerfully and without charge.

SECURING GOOD INSTALLATIONS

MOSAIC TILES are distributed through, and installed by, reliable tile contractors throughout the country, including leading firms in the trade. Knowing that the selection of a good tile contractor is important, we will gladly furnish, if desired, names of those who are properly qualified.

TO SPECIFY MOSAIC TILES

Architects who want to make sure that MOSAIC TILES are used, should include in their specifications —"Tile work shall be of Mosaic Tiles standard quality manufactured by The Mosaic Tile Company of Zanesville, Ohio." Also ask for a Certificate of Quality. We also suggest the approved short form Specification of the Tile Manufacturers Association.

COVER ILLUSTRATION

Narthex of St. Margaret Mary's Church
Chicago, Illinois
McCarthy, Smith and Eppig, Architects

Hand made unglazed Ironstone in a blend of natural clay colors is utilized for both the wainscot and the floor in the Narthex illustrated on the front cover. Decorated inserts and glazed Faience are added in the panels and borders.

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THE MOSAIC TILE COMPANY

Factory and Main Office . . . Zanesville, Ohio

Plant No. 2, Matawan, N. J. **Quarry Plant: The Carlyle Tile Company, Ironton, Ohio**

Branch Offices and Showrooms (See Back Cover)

MEMBER, TILE MANUFACTURERS ASSOCIATION

Hall in an interesting treatment of hand crafted faience combining beauty and durability in a pleasing manner.

The Coffey Residence, Orlando, Florida
Richard Boone Rogers, Architect

A colorful combination of hand crafted faience and Ironstone is used very effectively in this Baptistry.

St. Margaret Mary's Church, Chicago
McCarthy, Smith & Eppig, Architects

Nine-inch hexagons in irregular surface faience contribute to the charm of this colorful solarium.

The Hydrangea Blue is one of our popular water-marked glazes.
The Dole Residence, Chicago. George Connor, Architect

A sandbox, fountain and floor in bright colored faience adds beauty and durability to this bay in a kindergarten. The inserts are from our line of kindergarten subjects.

Thomas Street School
Lansing, Mich.
Warren S. Holmes Co.
Architect

FAIENCE FLOOR DESIGN NO. 584

(Below)

6 x 6 and 6 x 6 cut for 2 x 2
Color No. 3151
3 x 3 and 2 x 2
Color No. 316
2 x 2 Inserts
various Patterns in
Colors Nos. 316 and 347

The foyer floor above is random brown-mottled greens in faience with harmonizing colors added in the border and center decorated panel. The same colors are repeated in the faience fountain back.

Thomas Street School
Lansing, Mich.
Warren S. Holmes Co., Architect

Four patterns of six by six Hispania decorated faience make up the wainscot in a room of the Chapel; the floor is a random pattern in unglazed Ironstone.

Ottawa Hill Memorial
Park Cemetery
Toledo, Ohio
W. D. Holtzman, Architect

FAIENCE FLOOR DESIGN NO. 585

(Below)

3″ elongated notched
Hexagon Color No. 273
with Dots in Colors Nos.
345, 464 and 4001
3 x 3 Color No. 345
6 x 1 Color No. 261

451 Sky Blue

6008 Mesange

6005 Dewkiss Green

7051 Serpent Green

7052 Tea Green

454 Venezia Blue

6009 Huron Blue

6006 Posy Green

498 Emerald Green

7053 Lincoln Green

7050 Glacier Blue

6010 Como Blue

417 Blue Spruce

6007 Persian Green

355 Brewster Green

FAIENCE COLORS

These color charts are reproduced from actual tiles and match as closely as possible considering the texture characteristic of each glaze. Faience glazes vary from time to time so it is suggested samples be obtained for approval.

288 Apple Green

280 Monticello Green

338A Stippled Light Blue

378 Hydrangea Blue

396 Marie Antoinette

393 Naiad Green

375 Elm Green

279 Mottled Blue Grey

379 Legion Blue

397 Rose Blush

334 Mottled Warm Green

3151 Mottled Cool Green

464 Neptune

390 Ashes of Roses

291 Saraband Red

410 Ivory

7054 Flax

7058 Moth

6011 Doe

750 Shell Gray

480 Italian Straw

7055 Malacca

7059 Honeysuckle

6012 Tuscan

7061 Beaver Pelt

463F Straw

7057 Powdered Gold

7060 Maple Sugar

7056 Malay

354 Royal Black

Gold, Silver, Bronze and several other colors are not included in these charts which illustrate only a part of the complete palette of Mosaic Faience Glazes. Most all glazes can be applied on Faience shapes as well as flat tile.

FAIENCE COLORS

754 Rose Orchid

485 Shadow

286 Cream

261 Fawn

966 Burnt Orange

418 Rose Lavender

60188D Bracken Gray

278 Primrose

273 Coffee

388 Amber Yellow

5879E Taupe

402 French Gray

277 Corn

345 Chestnut

4001 Chinese Red

MOSAIC **THE MOSAIC TILE CO.**

HAND DECORATED FAIENCE INSERTS AND STRIPS

6 x 6 P. 3001 D. 8382
6 x 6 P. 3002 D. 8385
6 x 6 P. 3009 D 8368
6 x 6 P. 3011 D. 8371
6 x 6 P. 3053 D. 8383
6 x 6 P. 3092 D. 8370
6 x 6 P. 4091 D. 8375
6 x 6 P. 5014 D. 8380
6 x 6 P. 5019 D. 8384
6 x 6 P. 5021 D. 8374
6 x 6 P 5022 D. 8373
6 x 6 P. 5024 D. 8381
6 x 6 P. 5036 D. 8372
6 x 6 P. 5040 D. 8379
4¼ x 4¼ P. 3015 D. 8359
4¼ x 4¼ P. 3017 D. 8387
4¼ x 4¼ P. 3020 D. 8357
4¼ x 4¼ P 3028 D. 8391
4¼ x 4¼ P. 3076 D. 8389
4¼ x 4¼ P. 3077 D. 8362
4¼ x 4¼ P. 3082 D. 8354
4¼ x 4¼ P. 3093 D. 8386
4¼ x 4¼ P. 3107 D. 8390
4¼ x 4¼ P. 4310 D. 8433
4¼ x 4¼ P. 4114 D. 8356
4¼ x 4¼ P. 4115 D. 8361
4¼ x 4¼ P. 4116 D. 8360
4¼ x 4¼ P 4298 D 8366
4¼ x 4¼ P. 4302 D. 8367
4¼ x 4¼ P. 4317 D. 8396
4¼ x 4¼ P. 4327 D. 8395
4¼ x 4¼ P. 4329 D. 8392
4¼ x 4¼ P. 4332 D. 8397
4¼ x 4¼ P 4334 D. 8394
4¼ x 4¼ P. 4343 D. 8393
4¼ x 4¼ P. 4349 D. 8434
4¼ x 4¼ P. 5044 D. 8355
4¼ x 4¼ P. 5046 D. 8432
4¼ x 4¼ P. 5047 D. 8365
4¼ x 4¼ P. 5045 D. 8388
4¼ x 4¼ P. 5048B D. 8358
3 x 3 P. 3030 D. 8335
3 x 3 P. 3031 D. 8350
3 x 3 P. 3032 D. 8334
3 x 3 P. 3033 D. 8349
3 x 3 P. 3034 D 8341
3 x 3 P. 3038 D. 8338
3 x 3 P. 3039 D. 8346
3 x 3 P. 3041 D. 8339
3 x 3 P. 3042 D. 8345
3 x 3 P. 3043 D. 8336
3 x 3 P. 3056 D. 8344
3 x 3 P. 3081 D. 8340
3 x 3 P. 4018 D. 8351
3 x 3 P. 4020 D. 8352
3 x 3 P. 4033 D. 8347
3 x 3 P 4034 D. 8348
3 x 3 P. 4051 D. 8353
3 x 3 P. 4093 D. 8342
3 x 3 P. 4150 D. 8337
3 x 3 P. 4154 D. 8343
2 x 2 P. 3045 D. 8324
2 x 2 P. 3046 D. 8332
2 x 2 P. 3047 D. 8329
2 x 2 P. 3047 D. 8328
2 x 2 P. 3048 D 8331
2 x 2 P. 3048 D. 8325
2 x 2 P. 3049 D. 8333
2 x 2 P. 3184 D. 8330
2 x 2 P. 3185 D. 8326
2 x 2 P. 3805 D. 8327
6 x 3 P. 3050 D. 8399
6 x 3 P. 3090 D 8400
6 x 3 P. 3094 D. 8404
6 x 3 P. 3100 D. 8398
6 x 3 P. 3103 D. 8401
6 x 3 P. 3108 D. 8403
6 x 3 P. 4192A&B D. 8402
6 x 2 P. 3091 D. 8411
6 x 2 P. 3183 D. 8408
6 x 2 P. 3258 D 8406
6 x 2 P. 3258 D. 8410
6 x 2 P. 3259 D. 8407
6 x 2 P. 4210 D. 8409
6 x 2 P. 4225 D. 8405
6 x 1½ P. 3102 D. 8414
6 x 1½ P. 4054 D. 8413
6 x 1½ P. 4075 D. 8412
6 x 1½ P. 4080 D. 8415
6 x 1¼ P. 3101 D. 8422
6 x 1¼ P. 4023 D 8417
6 x 1¼ P. 4028 D. 8421
6 x 1¼ P. 4038 D. 8418
6 x 1¼ P 4058 D. 8419
6 x 1¼ P. 5005 D. 8420
6 x 1¼ P. 5006 D. 8423
6 x 1¼ P. 5007 D. 8416
6 x 1¼ P. 5008 D. 8424
6 x 1 P. 3137 D 8426
6 x 1 P. 4126 D. 8427
6 x 1 P. 4140 D. 8430
6 x 1 P. 5002 D 8429
6 x 1 P. 5010 D. 8428
6 x 1 P. 5025 D. 8431
6 x 1 P. 5026 D. 8425
6 x 1 P. 5027 D. 8431

SPECIAL FAIENCE PROJECTS—The execution of unusual work in hand-made faience is a specialty with us. As indicated in the illustrations on this page we are equipped to competently take care of any size job of a special decorated nature. Besides being able to do special decorated on flat tile we have the facilities for the manufacture of unusual shapes and sizes required in fountains, mantels, altars, circular or odd shape floors; in fact anything that can be moulded and fired in faience we can furnish.

Our Art and Faience Department will be glad to cooperate in the development of any project. A complete service including preliminary studies, water color sketches and full size details is available to any one interested.

The friezes for the Will Rogers Memorial Coliseum and the Auditorium were executed in black outline type of decoration on a special faience body in 9″ x 9″ units.

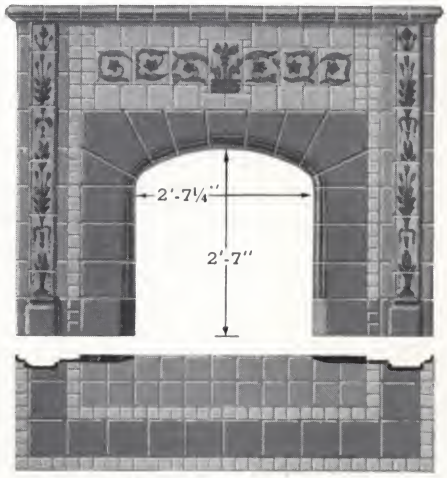
Left: A section of the Auditorium Frieze reproduced from actual tiles.

Faience Frieze on the Coliseum, Fort Worth, Texas. Wyatt C. Hedrick and Elmer G. Withers, Architects.

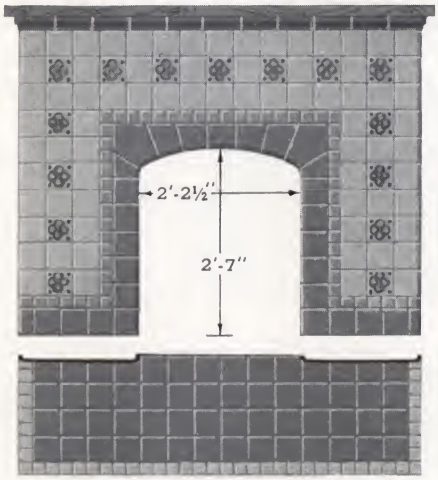
A combination of black outline and overglaze decoration was employed in making the panel for Our Lady of Loretto Church. The body is red faience in 6″ x 6″ units.

Faience Panel on Our Lady of Loretto Church, Philadelphia, Pa.
Petrillo and Neely, Architects.

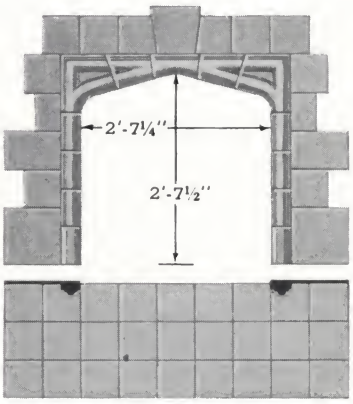
FAIENCE MANTELS—The illustrations below suggest only a few possibilities for utilizing standard faience shapes in designing fireplaces to conform to different requirements and to suit individual tastes. All patterns can be had in practically any combination of our regular faience colors. Handcrafted faience being vitrified is not affected unfavorably by the heat nor by the occasional rough usage to which a fireplace is subject. A catalog containing colored plates of standard mantels and carrying complete specifications upon request.



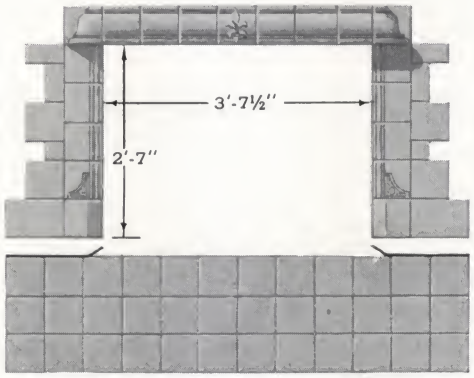
Mantel No. 428-Revised Arch No. 2660



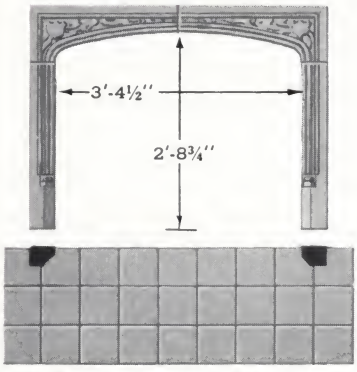
Mantel No. 450 Arch No. 2864



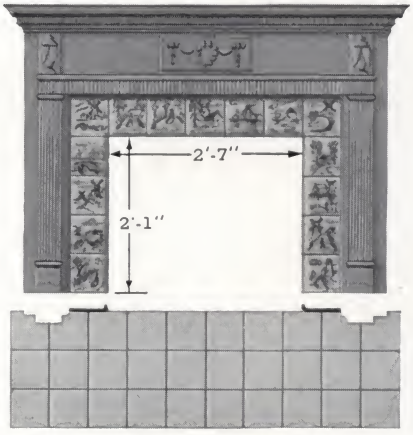
Mantel No. 409 Arch No. 2577
Available with openings
3'-1½", 2'-7½" and 4'-2"



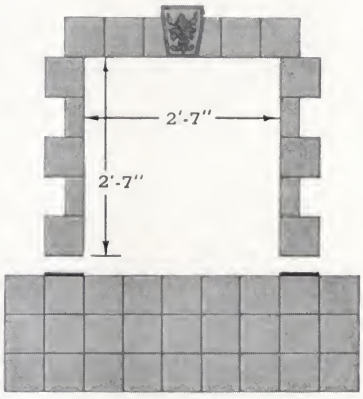
Mantel No. 413 with frame No. 2722



Tudor Arch No. 2863 Unglazed faience

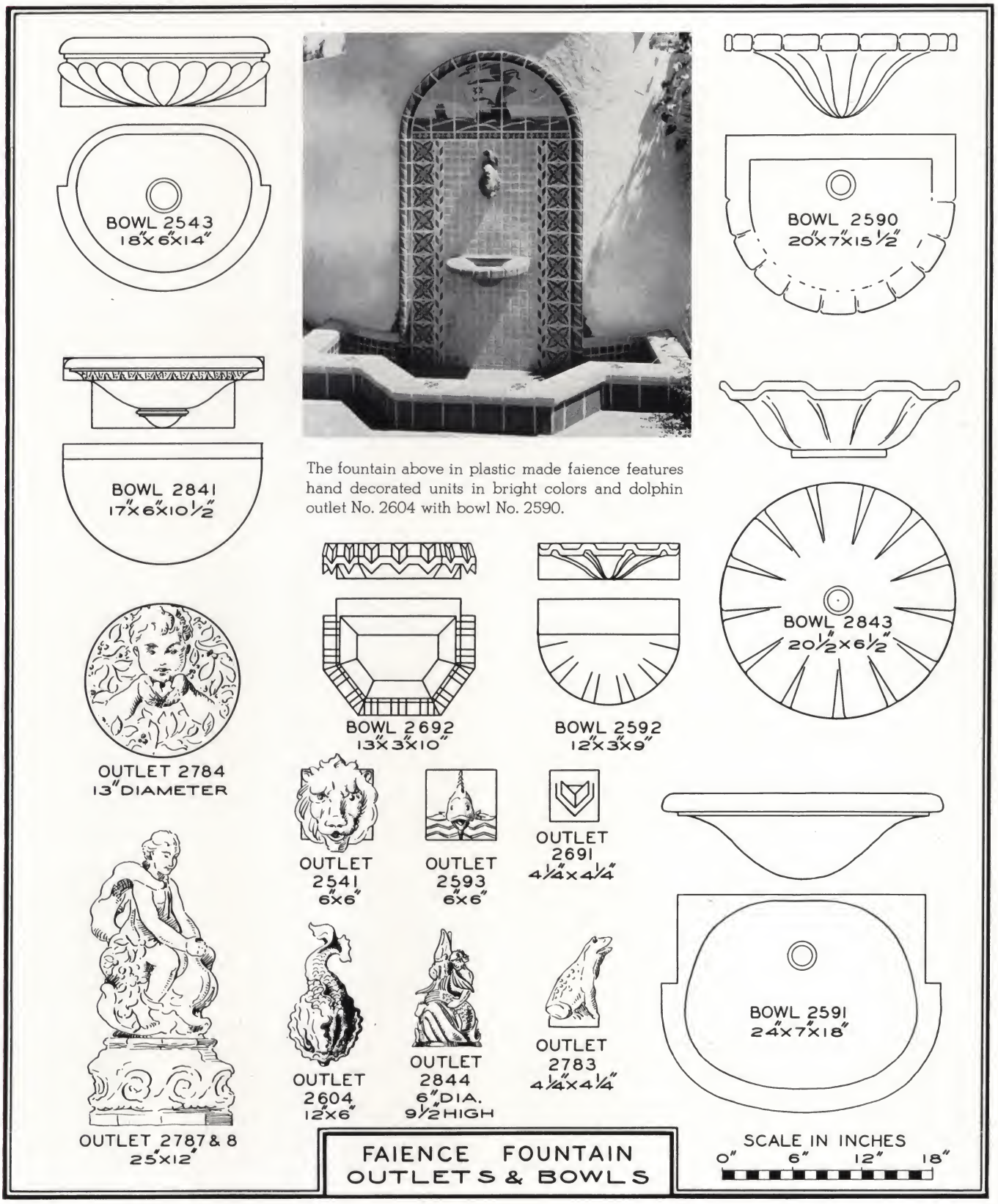


Hand painted Dutch inserts as facing
for wood mantel



Mantel No. 3145
Plain tile with glazed edges

FAIENCE FOUNTAIN BOWLS AND OUTLETS — The representative selection of fountain items illustrated below includes two types of wall bowls, flat back to be set on a plain wall and curved back to fit into a recess. Most patterns are made either with or without a hole for plumbing fixtures. All bowls and outlets are available in any regular faience glazes, see pages 6 and 7. Information on special items or complete stock fountains upon request.

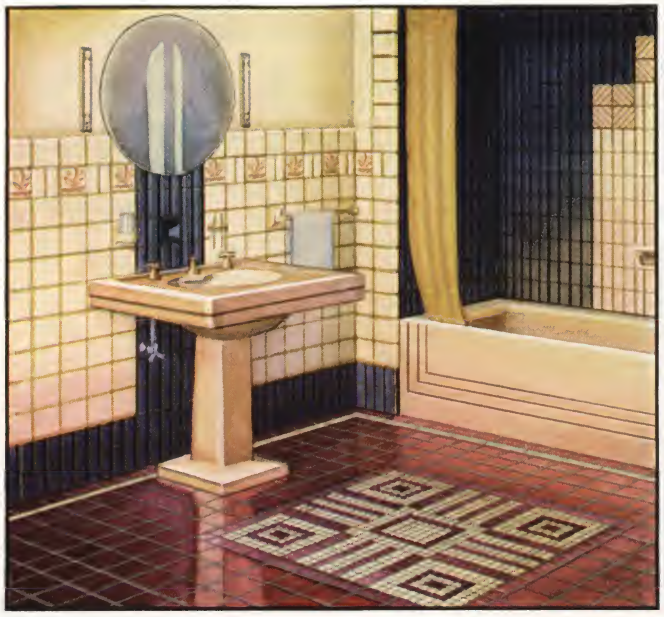


The fountain above in plastic made faience features hand decorated units in bright colors and dolphin outlet No. 2604 with bowl No. 2590.

FAIENCE FOUNTAIN OUTLETS & BOWLS

THE MOSAIC TILE CO.

SATIN MATT WALL TILE— The colors reproduced below are from our line of regular wall tile and have a texture the name implies, satin matt. All colors are available in either Cushion Edge or Square Edge in the following sizes: 6″ x 6″, 6″ x 3″, 3″ x 3″, 4¼″ x 4¼″, 4¼″ x 2⅛″ and 2⅛″ x 2⅛″. Other units, in square edge only, are made in 6″ x 9″, 4¼″ Octagons, 4¼″ Hexagons, 3″ Octagons, 3″ Hexagons and $1\frac{1}{16}$″ x $1\frac{1}{16}$″ dots. The trim units shown on page 16 are available in all Satin Matt glazes. The semi-gloss finish and the pleasing palette of rich colors account for the popularity of this tile for use as wainscoting in bathrooms, kitchens, powder rooms, school corridors, operating rooms and many other spaces. Also can be had on vitreous and semi-vitreous body for floor or exterior use.



L402 French Gray

L485 Light Orchid

L754 Rose Orchid

L60188D Bracken Gray

L410 Old Ivory

L418 Rose Lavender

L341 Meadow

L463F Straw

L480 Buttercup

L454 Medium Blue

L451 Sky Blue

L338A Stippled Blue

L7005 Pine Frost Green

L498 Emerald

L277 Oriental Yellow

L399 Hydrangea

L349 Peach Bloom

L398 Flesh

L7028 Glaucous Green

L967 Pale Green

L443 Sea Spray

L478 Cream

L7023 Light Ivory

L7041 Rose Amber

L280 Jade Green

L261 Fawn

L7042 Buckthorn Brown

L354 Royal Black

L490 Ox Blood

L345 Indian Brown

L404 Sienna Brown

L966 Burnt Orange

L6002 Bronze

MOZANE ENAMEL WALL TILE—The bright gloss glazes shown below are furnished on the same non-vitreous highly refined body as are the Satin Matt glazes. All Mozane Enamel glazes have a very high light reflecting capacity which makes them a particularly effective finish for spaces with limited natural light facilities. The high finish serves to intensify the quality of the color and places most of the glazes in the category of brilliant colors rather than pastel shades. A wainscot in Mozane Enamels is not only easily cleaned but at the same time discourages abuse from sources that would ordinarily mar a dull finish. For this reason this type of tile finds ready acceptance for use in school corridors and public comfort rooms in addition to general residential installations.

L213 Blossom Pink

L224 Persian Rose

L216 Indian Ivory

L220 Aqua Marine

L159 Oriental Blue

L147 Azure

L196 Nile Green

L6507 Butternut

L217 Peach Biege

L195 Light Orchid

L197 Canary

L211 Ming Green

L162 Fern Green

L6500 Oatmeal

L156 Pink

L200 Morning Glory

L215 Royal Ivory

L167 Seacrest Green

L158 Moss Green

L144 Dove Gray

L139 Dusk Gray

L40-4 Rose Tan

L218 Jonquil Yellow

L199 Peruvian Brown

L219 Yale Blue

L223 Burmese Red

L212 Citrus Yellow

The wainscot in the kitchen above is 4¼ x 4¼ Mozane Enamel color No. L212, the shoe and 6″ x ½″ strips color No. L6048, the frieze in 4¼ x 4¼ color No. L216 with Muratile inserts Patt. No. 238 Dec. Q-45. The dark blue ceramic floor features a center motif in harmonizing colors. See page 24.

Mozane Enamel wall tile on the walls and ceiling, Vitromat on the floor in the bathroom above.

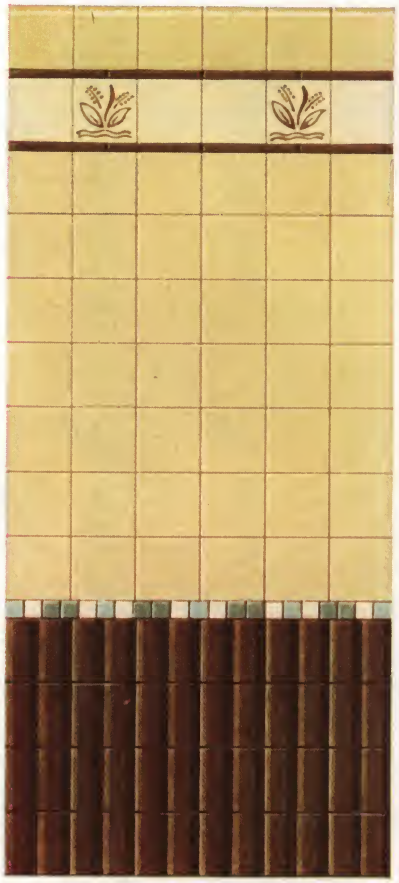
Hand made faience in a pleasing combination of Ochre and Como Blue is used in the bathroom above. The floor is faience mosaics.

Satin Matt wall tile in 9″x 6″ units make up the field of the above wainscot, the floor in faience mosaics.

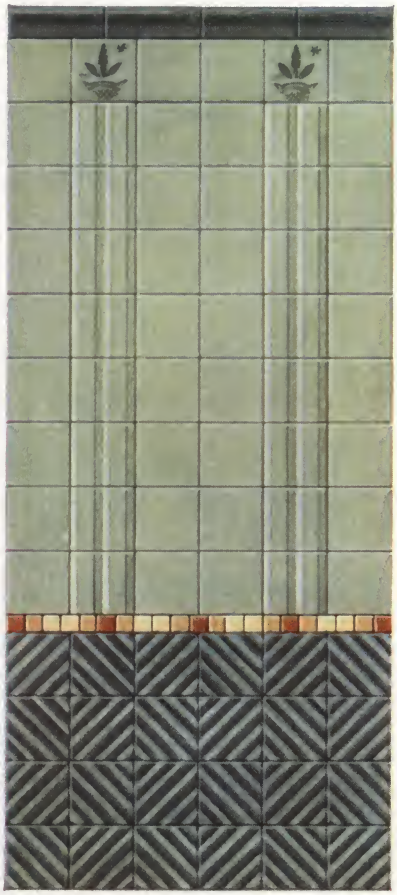
The tile drain board below is constructed of glazed ceramics in flat units and bullnose pieces to form the curb around the outside. Satin Matt wall tile make up the back apron.

Hand decorated panels of various related subjects are featured in the wainscot pictured above. They are slightly recessed and framed with a reeded bullnose. The border and 4¼x4¼ inserts are stock Muratile patterns. Mozane Enamel wall tile for the field is easily cleaned, an ideal finishing material for a market.

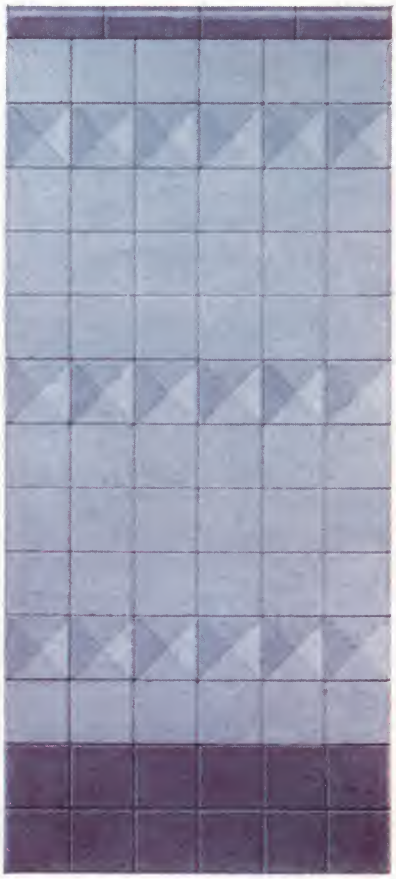
GLINT TILE IN L. C. BODY — The patterns illustrated below are available in Satin Matt and Mozane Enamel glazes. They size with regular wall tile and can be used very effectively either as solid wainscot or as feature treatments in a tub alcove, a dado or panels. Refer to bathroom page 12. Glint tile has a modeled face which utilizes the play of light in high lights and shadows to make up interesting patterns.



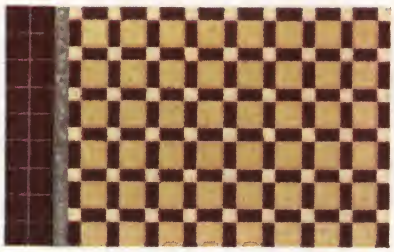
Dado 4¼ x 4¼ Glint No. G232 Col. No. L345: Wall 4¼ x 4¼ Col. No. L463F: frieze Col. No. L410 with Muratile Patt. No. 237-A28: 6 x ½ strips Col. No. L345: band 1 x 1 Faience Mosaic.



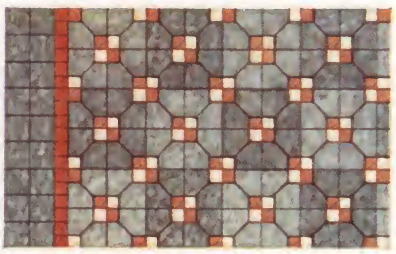
Dado 4¼ x 4¼ Glint No. G234 Col. No. L280: Wall 4¼ x 4¼ Col. No. L443 with Glint Patt. No. G232: Muratile Insert Patt. No. 238-F2: Cap 6 x 2 No. 227 Col. No. L280: band 1 x 1 Faience Mosaic.



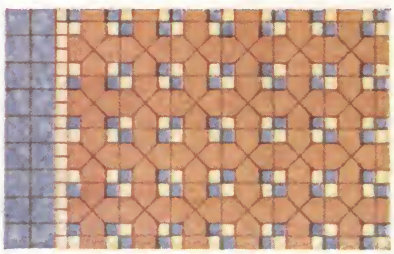
Dado 4¼ x 4¼ Col. No. L159: Wall 4¼ x 4¼ Mozane Enamel Col. No. L220 with Glint Patt. No. G235 Col. No. L220: Cap 6 x 2 B.N. No. M301 Col. No. L159.



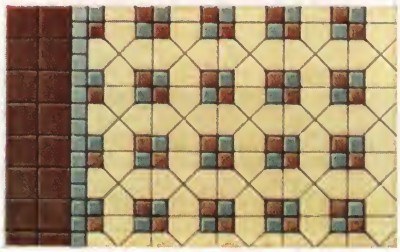
Floor No. 1827-A96 — Unglazed Ceramic, Colors Light Yellow, Lemon and Chocolate.



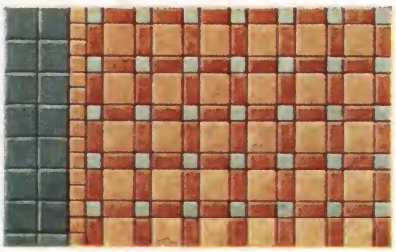
Floor No. 2193-G — Unglazed Ceramic, Colors Buff, Cream, No. 201 and No. 202.



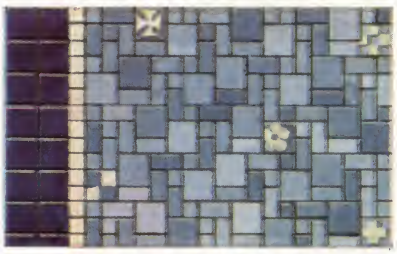
Floor No. 2203-A — Unglazed Ceramic, Colors Buff, Cream and No. 203.



Floor No. 2149-A6 — Faience Mosaic, Colors No. 463-F, No. 7056 and No. 7052.

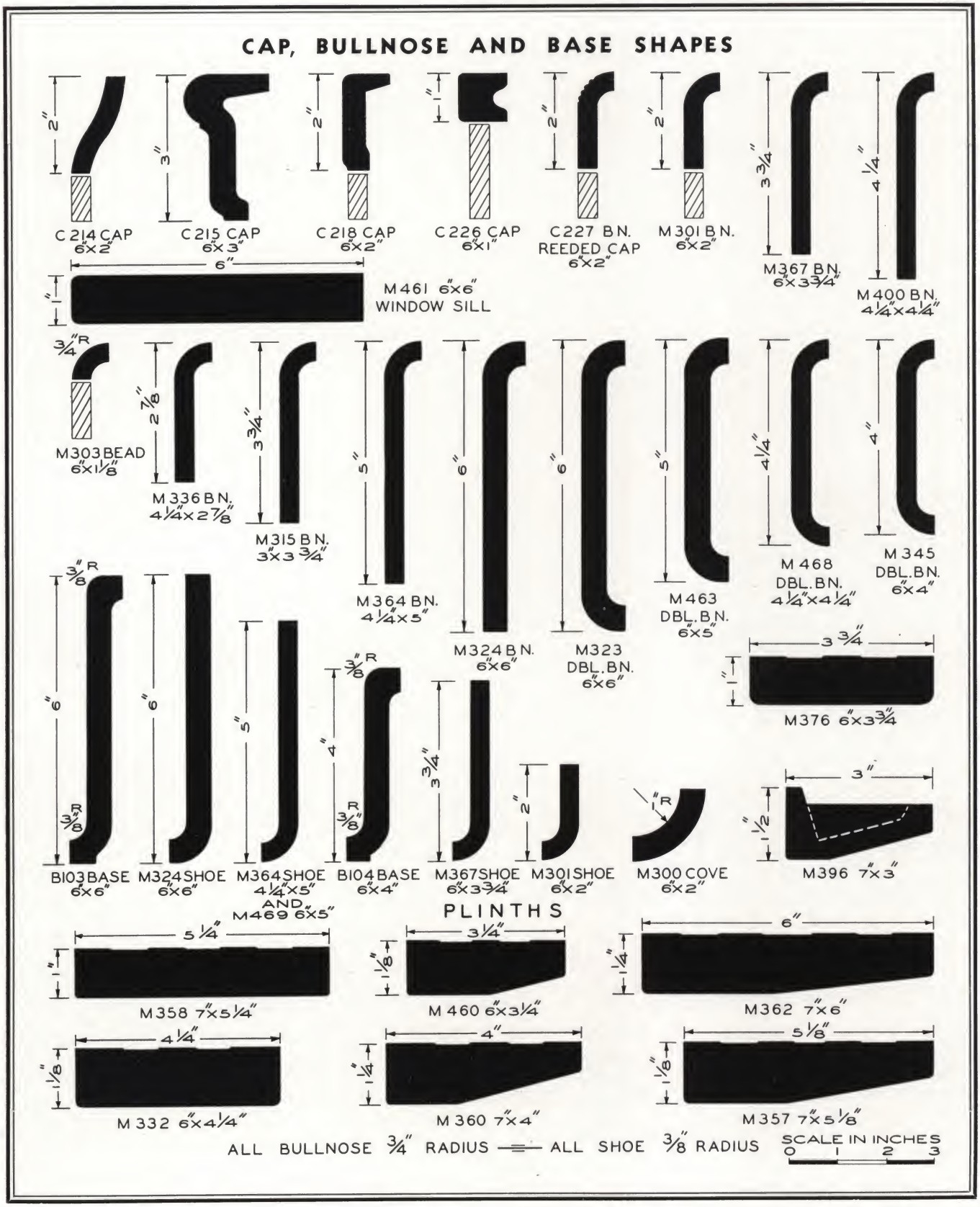


Floor No. 1800-A48 — Faience Mosaic, Colors No. 7059, No. 7060 and No. 6006.

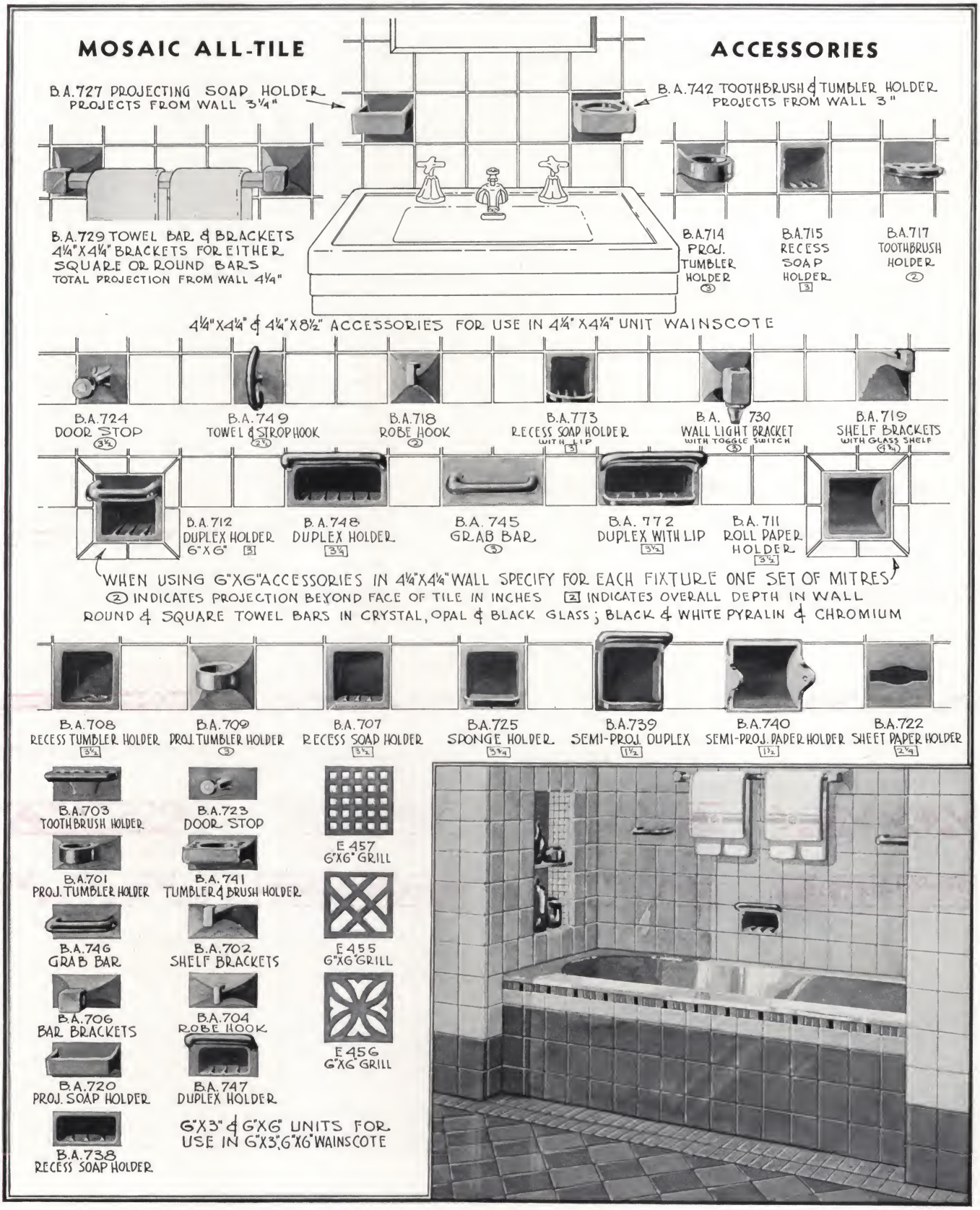


Floor No. 1832-A100 — Faience Mosaic, Colors No. 6009, No. 6010, No. 468E, No. 338-A 2 x 2 Inserts, Various.

TRIM CHART OF WALL TILE SHAPES — A representative lot of trim units are illustrated in cross section in the accompanying chart. All shapes are manufactured in the Satin Matt and Mozane Enamel glazes shown on pages 12 and 13. Only Bullnose Cap, Shoe and Combination Corners can be had in Cushion Edge, all other shapes in Square Edge only. All regular angles to match.



MOSAIC ALL-TILE ACCESSORIES — The same clay body goes into the manufacture of our all-tile accessories as is used in our regular wall tile. They can be had in either Satin Matt or Mozane Enamel glazes to match the surrounding wainscot in which they are installed. In addition to the sets made to fit 4¼" x 4¼", 6" x 6" or 6" x 3" wall tile there are several dowel type items which can be installed in an ordinary wall.



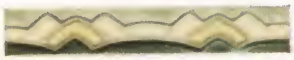
MOSAIC **THE MOSAIC TILE CO.**

DECORATED STRIPS — The patterns shown below are reproduced from actual tiles. Inlay patterns can be had in a wide variety of Satin Matt or Mozane Enamel color combinations. Mozane strips are available in black on almost all regular wall tile glazes. Muratile color combinations include those on page 19 as well as the ones at the bottom of this page. P indicates the Pattern number, D indicates the color combination shown.

INLAY DECORATED STRIPS

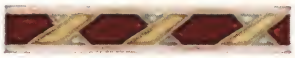
6 x 1 P. 76 D. AA

6 x 1 P. 77 D. AE


6 x 1 P. 78 D. AJ

6 x 1 P. 81 D. AN

6 x 1 P. 76 D. AB


6 x 1 P. 77 D. AF

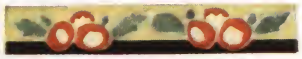
6 x 1 P. 80 D. AK

6 x 1 P. 81 D. AP

6 x 1 P. 77 D. AC

6 x 1 P. 78 D. AG

6 x 1 P. 80 D. AL


6 x 1 P. 81 D. AQ

6 x 1 P. 77 D. AD

6 x 1 P. 78 D. AH

6 x 1 P. 80 D. AM

6 x 1 P. 82 D. AR

6 x ½ P. 83 D. 1

6 x ½ P. 84 D. 60

6 x ½ P. 86 D. 4

6 x ½ P. 87 D. 72

6 x ½ P. 83 D. 5

6 x ½ P. 85 D. 1

6 x ½ P. 86 D. 8

6 x ½ P. 88 D. 1

6 x ½ P. 83 D. 8

6 x ½ P. 85 D. 5

6 x ½ P. 86 D. 21

6 x ½ P. 88 D. 5

6 x ½ P. 83 D. 65

6 x ½ P. 85 D. 16

6 x ½ P. 87 D. 1

6 x ½ P. 88 D. 10

6 x ½ P. 84 D. 16

6 x ½ P. 85 D. 65

6 x ½ P. 87 D. 54

6 x ½ P. 88 D. 22

6 x ½ P. 84 D. 22

6 x ½ P. 86 D. 1

6 x ½ P. 87 D. 64

6 x ½ P. 88 D. 60

MOZANE DECORATED STRIPS

6 x ½ P. 10 D. 1

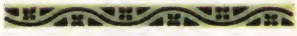
6 x ½ P. 12 D. 3

6 x ½ P. 13 D. 8

6 x ½ P. 15 D. 13

6 x ½ P. 11 D. 3

6 x ½ P. 12 D. 6


6 x ½ P. 14 D. 11

6 x ½ P. 16 D. 11

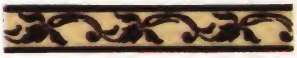
6 x 1 P. 18 D. 1

6 x 1 P. 20 D. 5

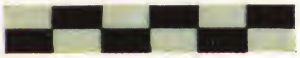
6 x 1 P. 22 D. 9

6 x 1 P. 24 D. 8

6 x 1 P. 19 D. 10


6 x 1 P. 21 D. 3

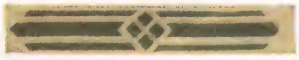
6 x 1 P. 23 D. 32

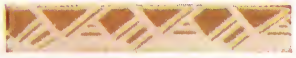

6 x 1 P. 25 D. 11

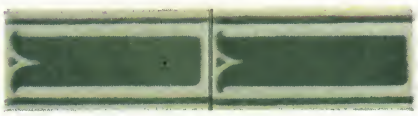
MURATILE DECORATED STRIPS

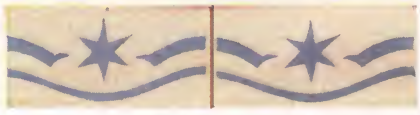
6 x 1 P. 134 D. A2

6 x 1 P. 146 D. B5


6 x 1 P. 217 D. T2


6 x 1 P. 147 D. A8


4¼ x 2 P 183 D. E2

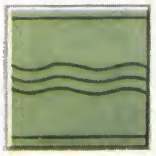

4¼ x 2 P. 227 D. A5

4¼ x 2 P. 240 D. C8

Patt. 100
Dec. A50

Patt. 105
Dec. G35

Patt. 111
Dec. A6


Patt. 117
Dec. F2

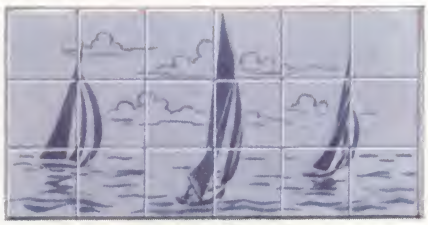
Patt. 120
Dec. G2

Patt. 121
Dec. U51

Patt. 124
Dec. D29

MURATILE PANELS, STRIPS AND INSERTS — The complete line is manufactured on both Satin Matt and Mozane Enamel backgrounds. The letter in the decoration symbol indicates the background color while the numerals specify the color of the ornament. Pattern No. 236 Dec. No. 88 shown above can be adjusted to any space and is most effective when used on either a very dark or a very light ground.

Patt. 136
Dec. B5


Panel 196 Dec. V5

Patt. 237
Dec. U44

Panel 226 Dec. A3

Panel 193 Dec. E2

Panel 242 Dec. E47

Patt. 219 Dec. A5

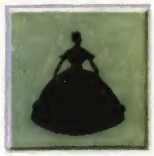
Panel 224 Dec. G8

Patt. 106 Dec. C3

Patt. 229
Dec. A29

Patt. 230
Dec. C29

Patt. 231
Dec. G29


Patt. 234
Dec. F29

Patt. 238
Dec. A49

Patt. 239
Dec. A54

Patt. 241
Dec. A28

MOSAIC **THE MOSAIC TILE CO.**

UNGLAZED CERAMIC MOSAICS — The twenty-three smaller squares below show our complete line of regular vitreous and semi-vitreous ceramic colors which can be had in any pattern. Standard units include ¾" x ¾"; ¾" x 1 9/16"; 1 9/16" x 1 9/16"; 1 1/16" x 1 1/16"; 1 1/16" x 2 3/16"; 2 3/16" x 2 3/16"; 1 9/16" Pentagons; 1 9/16" Corner-off, as well as other related sizes.

White | Black | Light Gray | Dark Gray | Light Blue | Dark Blue

Lobby of Women's Comfort Station, Lynn, Mass. — George A. Cornet, Architect.

Orchid | Pink | Pink Velvetex | Blue Velvetex | Light Green Velvetex | Dark Green Velvetex

Cream | Buff | Salmon | Red | Chocolate | Lemon | Light Yellow | Celadon | Green

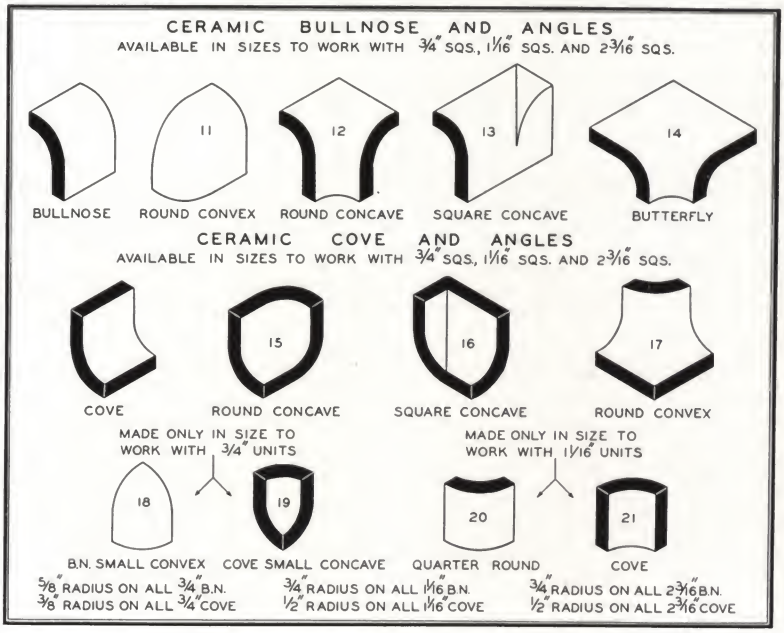
GRANITEX CERAMICS — Natural clay types as indicated below possess an interesting stippled color variation and texture. The non-slip qualities of the minutely irregular surface make Granitex an ideal flooring material. Standard sizes are 1 1/16 x 1 1/16; 1 1/16 x 2 3/16; 2 3/16 x 2 3/16 and 2 3/16 Pentagons. All units are available in either cushion edge or square edge. Cream No. 1231 not shown is lighter than No. 1223.

Gray Granite | Red Granite

Buff Granitex 1223 | Tan Granitex 1221 | Brown Granitex 1222 | Black Granitex 1228 | Blue Green 1227 | Blue Gray 1226 | Red Granitex 1225

ABRASIVE NON-SLIP CERAMIC MOSAICS

All of the ceramic colors shown above are available in our recently developed abrasive line of floor tiles in ¾" x ¾" and 1 1/16" x 1 1/16" units. Although these tiles possess a very efficient non-slip texture they do not have the customary pitted surface. Being either vitreous or semi-vitreous Mosaic Abrasive Tiles have a low absorption capacity which makes them easily cleaned, and at the same time resistant to eventual discoloration.



IRONSTONE

is plastic-made and shows in its range of warm buffs and salmons the natural colors of the clay from which it is made. Beauty and durability are combined in this unsurpassed all-purpose tile. Available in 1 x 1; 1 x 2; 2 x 2 and 2" Pentagon units, and in many patterns.

CERAMIC TRIM CHART

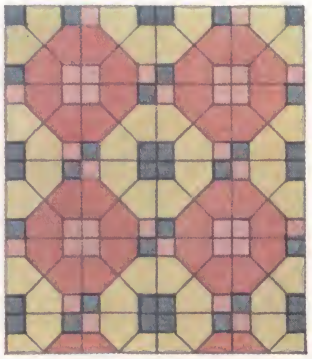
Trim units as illustrated are available in all the Ceramic and Granitex colors shown above.

THE MOSAIC TILE CO.

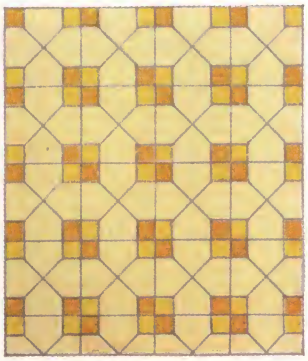
MOSAIC

CERAMIC MOSAICS — The floor patterns below are a representative selection of all-over designs made up of standard units and colors from the chart on page 20. Unglazed ceramics are the same color throughout the thickness of the tile and being either vitreous or semi-vitreous will not show wear even under the most abusive usage. Any pattern can be had in any combination of ceramic colors.

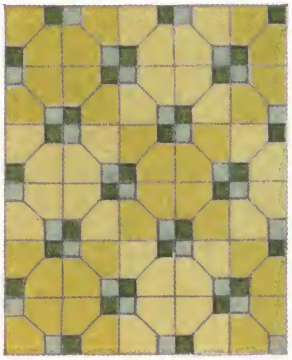
Design 2148A8
Orchid, Cream, Light Grey



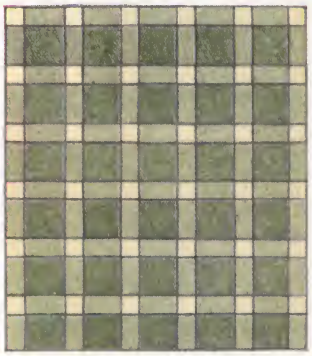
Design 2190A
Cream, Pink, 203, 205



Design 2186A
Light Yellow, Lemon, Buff

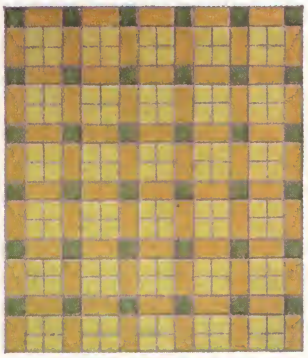


Design 2187A
Light Yellow, Lemon, 201, 202

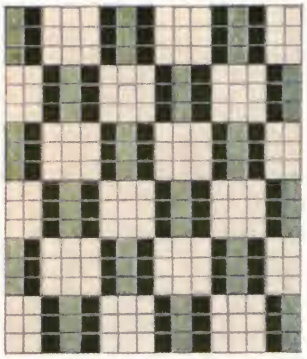


Design 1827A52
Cream, 201, 202

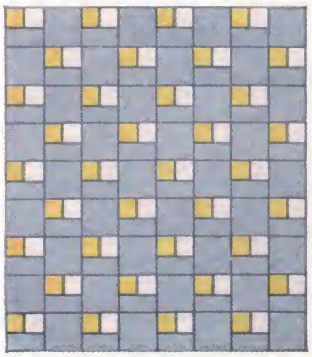
Design 1810A14
201, 202, Buff



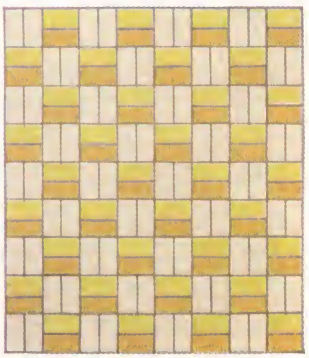
Design 2173G
Lemon, Buff, 201



Design 2147C
Cream, Green, 201



Design 2175I
203, Cream, Buff



Design 1992P
Cream, Buff, Lemon

Design 2174G
Buff, 201, Cream

Design 1809I
Cream, 201

GRANITEX FLOORS are extremely practical. . . The designs illustrated below incorporate our most popular colors and regular Granitex sizes.

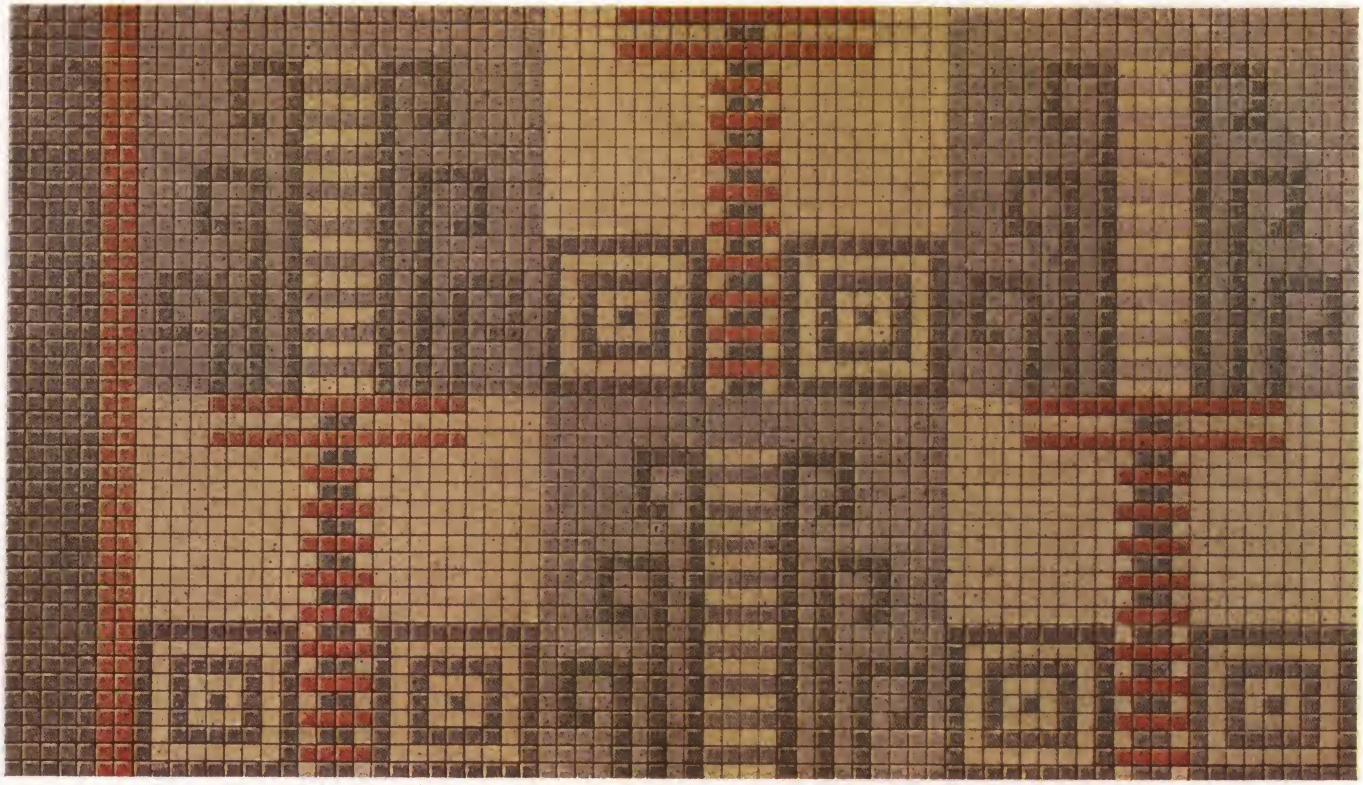
Design 2149P
1221, 1223, 1222

Design 1800A34
1221, 1223, 1222

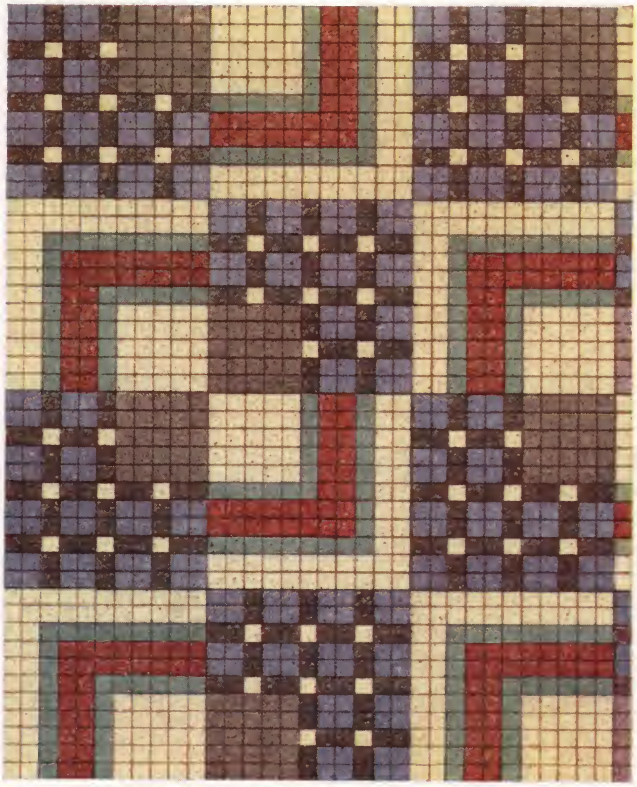
Design 1832A
1221, 1223

Design 2184C
1226, 1227, 1223, 1222

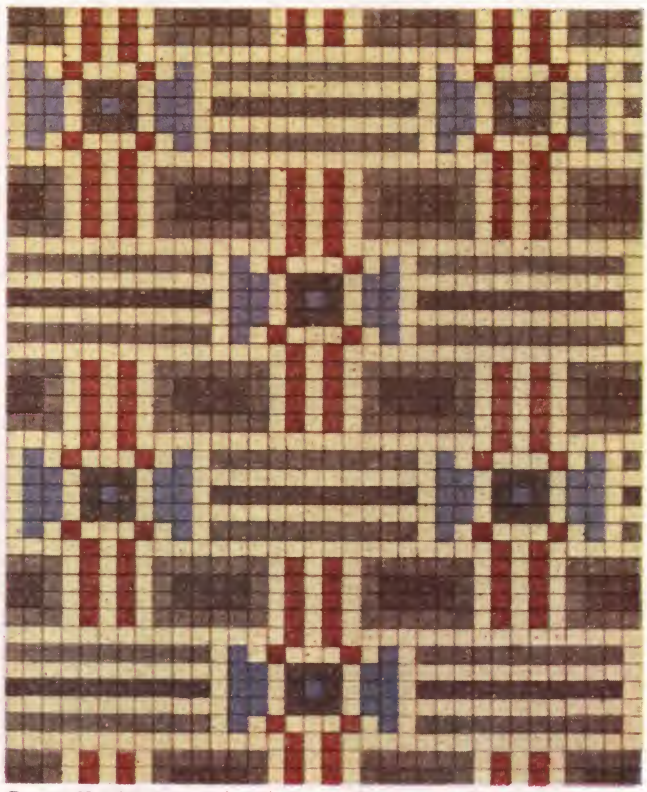
GRANITEX CERAMICS are a natural clay body and possess a flecked texture which contributes both to a pleasing color range and to a non-slip surface. Granitex being an unglazed tile is the same color and texture throughout, an ideal material for floors subject to heavy traffic. In addition to floors the subdued colors and the various size units provide interesting possibilities for unusual wainscot treatments.



Design No. 2195-A—1 1/16 x 1 1/16 Cushion Face colors No. 1221 Tan, No. 1222 Brown, No. 1223 Buff and No. 1225 Red.

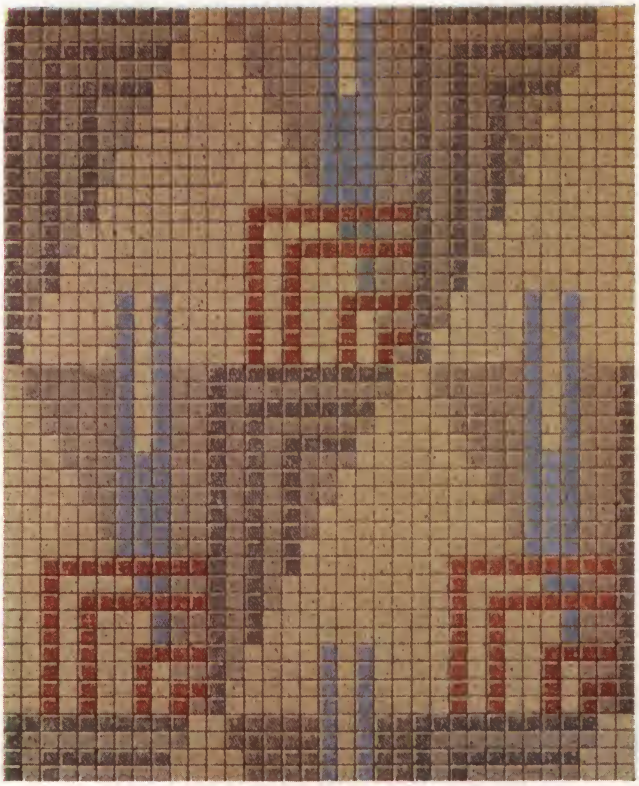


Design No. 2196-A—1 1/16 x 1 1/16 Square Edge colors No. 1221 Tan, No. 1222 Brown, No. 1225 Red, No. 1226 Blue-Gray, No. 1227 Blue-Green, No. 1231 Cream.

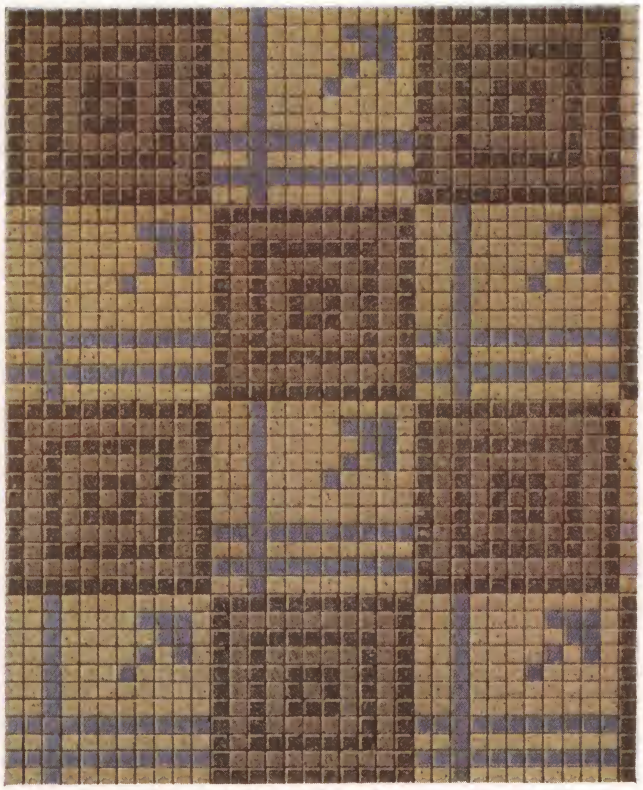


Design No. 2197-A—1 1/16 x 1 1/16 Square Edge colors No. 1221 Tan, No. 1222 Brown, No. 1225 Red, No. 1227 Blue-Green, No. 1231 Cream.

GRANITEX CERAMICS are available in the following sizes: 1 1/16" x 1 1/16"; 1 1/16" x 2 3/16"; 2 3/16" x 2 3/16" and 2 3/16" Pentagons in both a square edge and cushion face. Trim tile can be had in the shapes indicated for 1 1/16" units shown in chart at bottom of page 20. The complete palette of colors, with the exception of No. 1231, is shown in the middle of page 20.

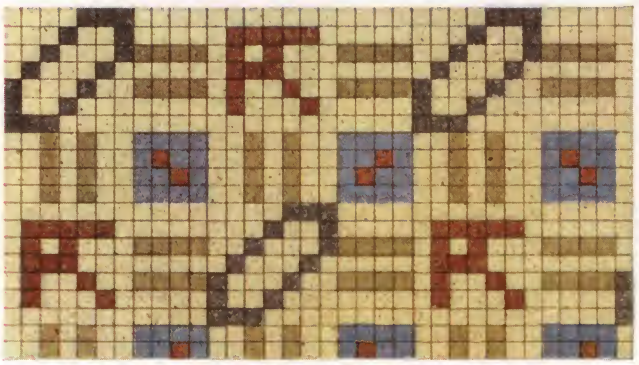


Design No. 2198-A—1 1/16 x 1 1/16 Cushion Face colors No. 1221 Tan, No. 1222 Brown, No. 1223 Buff, No. 1225 Red, No. 1227 Blue-Green.

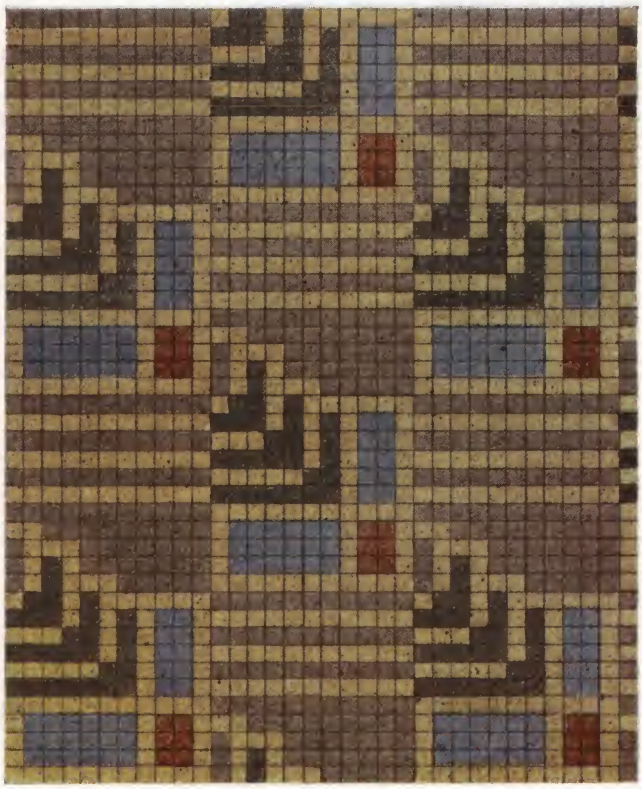


Design No. 2199-A—1 1/16 x 1 1/16 Cushion Face colors No. 1221 Tan, No. 1222 Brown, No. 1223 Buff, No. 1227 Blue-Green.

Design No. 2200-A—1 1/16 x 1 1/16 Square Edge colors No. 1222 Brown, No. 1223 Buff, No. 1225 Red, No. 1227 Blue-Green, No. 1231 Cream.



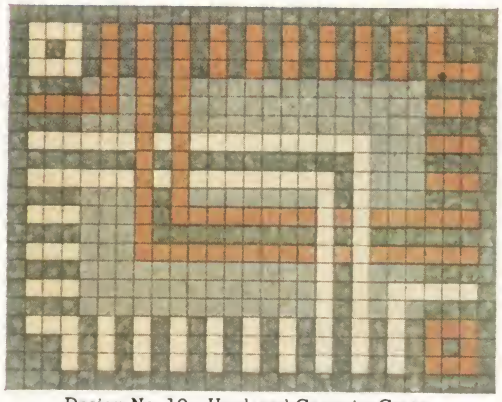
Design No. 2201-A—1 1/16 x 1 1/16 Square Edge colors No. 1222 Brown, No. 1223 Buff, No. 1225 Red, No. 1227 Blue-Green, No. 1231 Cream.



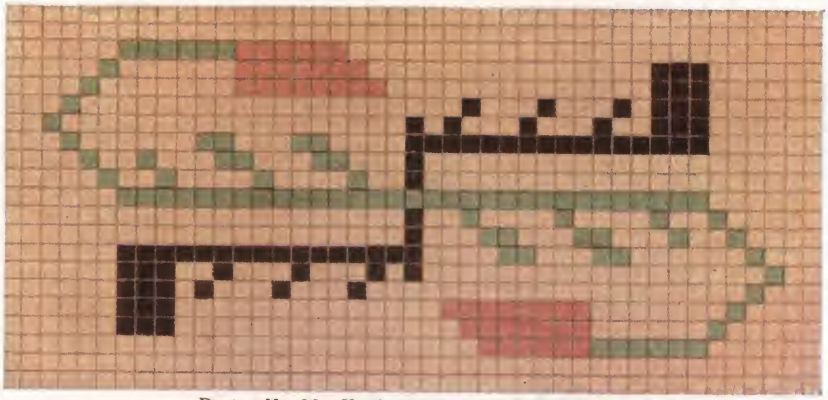
Design No. 2202-A—1 1/16 x 1 1/16 Square Edge colors No. 1221 Tan, No. 1222 Brown, No. 1223 Buff, No. 1225 Red, No. 1227 Blue-Green.

DECORATIVE CENTERPIECES — Floors in a solid color with a center decorative motif as shown in the bathroom below are a very popular alternative to all-over geometric patterns. The various designs illustrated are available in ¾" x ¾" and 1 1/16" x 1 1/16" units, and in any unglazed ceramic color combination; also in 1 1/16" x 1 1/16" granitex colors. See color chart, page 20. The same designs and many others can be executed in glazed faience mosaics, pages 6 and 7 for colors. See floor patterns in bathroom and kitchen, pages 12 and 13.

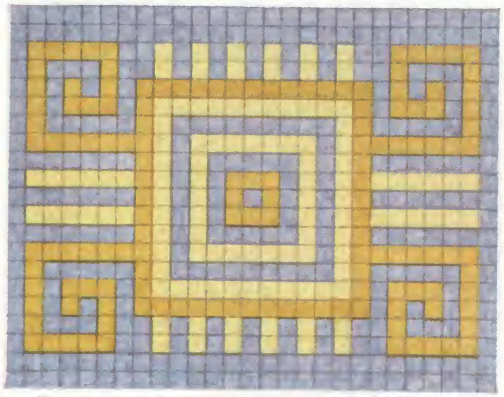
Design No. 15—Granitex Ceramic: No. 1222 Brown, No. 1223 Buff, No. 1225 Red, No. 1227 Blue-Green.



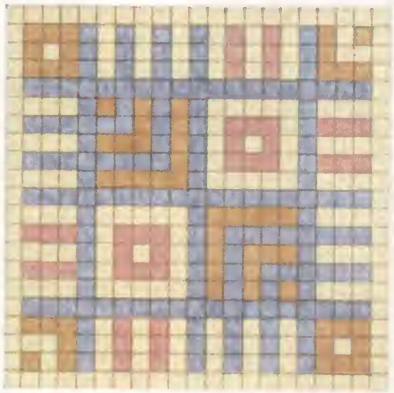
Design No. 10—Unglazed Ceramic: Cream, Buff, No. 201, No. 202.



Design No. 11—Unglazed Ceramic: Buff, Salmon, Chocolate, Celadon.



Design No. 12—Unglazed Ceramic: Light Yellow, Lemon, No. 203.



Design No. 13—Unglazed Ceramic—Cream, Buff, Pink, No. 203.

Design No. 14 — Unglazed Ceramic: Light Yellow, Lemon, Salmon, Celadon, No. 201, No. 202.

GRANITEX Floor Tile selected for its durability and safety. One of the Laboratory Spaces, Mellon Institute, Pittsburgh, Pa.
Architects — Jansen & Cocken.

A construction view of the generator hall in the powerhouse of the Pickwick Landing Dam on the Tennessee River, showing part of the eleven thousand square feet of 6″ x 6″ Gray Flint Tile furnished on this project.
Tennessee Valley Authority — Harry B. Tour, Senior Architect

Corridor Floor of 6 x 6 Plastic Made Ironstone Floor Tile in pleasing tone variation. East Liberty Presbyterian Church, Pittsburgh, Pa.
Architects — Cram & Ferguson

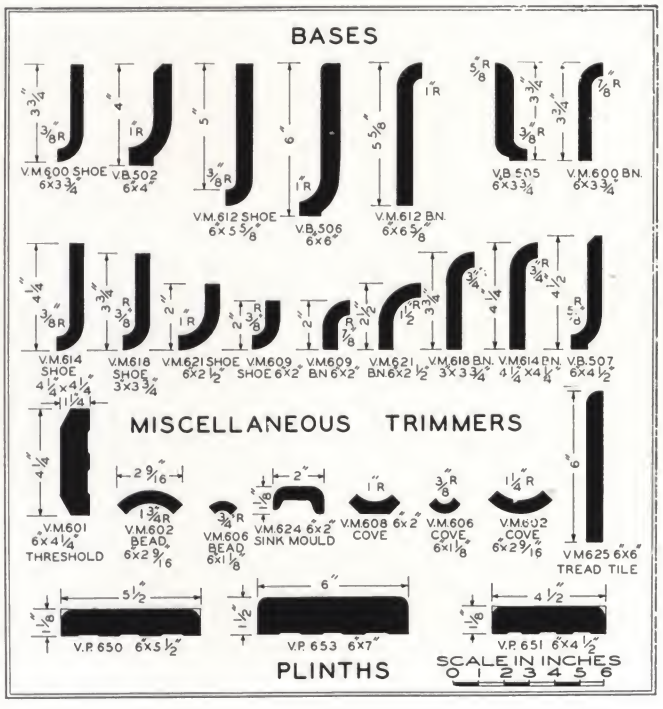
MOSAIC FLINT FLOOR TILES are unglazed dust pressed Vitreous and Semi-vitreous tiles, highly resistant to wear and impervious to moisture and foreign substances. This material is the highest type of floor tile, especially suitable for public buildings, corridors, operating rooms, turbine rooms, bottling rooms, stair treads and other places subjected to severe wear. Mosaic Flint is produced in the same colors as Ceramic Mosaic Tile, as reproduced on Page No. 18. Granitex and Velvetex Colors are included as well as several abrasive non-slip colors. Sizes available are 3 x 3, 6 x 3, 4¼ x 4¼, 6 x 6, 4¼ x 2⅛, 2⅛ x 2⅛, 2″, 3″, and 4¼″ Hexagons, 3″ and 4¼″ Octagons and Dots.

Trim tiles produced in Ohio Flint are illustrated in cross section chart below.

FLINT FLOOR DESIGN NO. 586

Field: 4¼ x 4¼ x ½ Granitex Natural Clay Type dust pressed Colors No. 1221 Tan — No. 1223 Buff.

Border: 6 x 6 Granitex Color No. 1222 Brown — 6 x 3 No. 1225 Red, 3 x 3 No. 1228 Black.

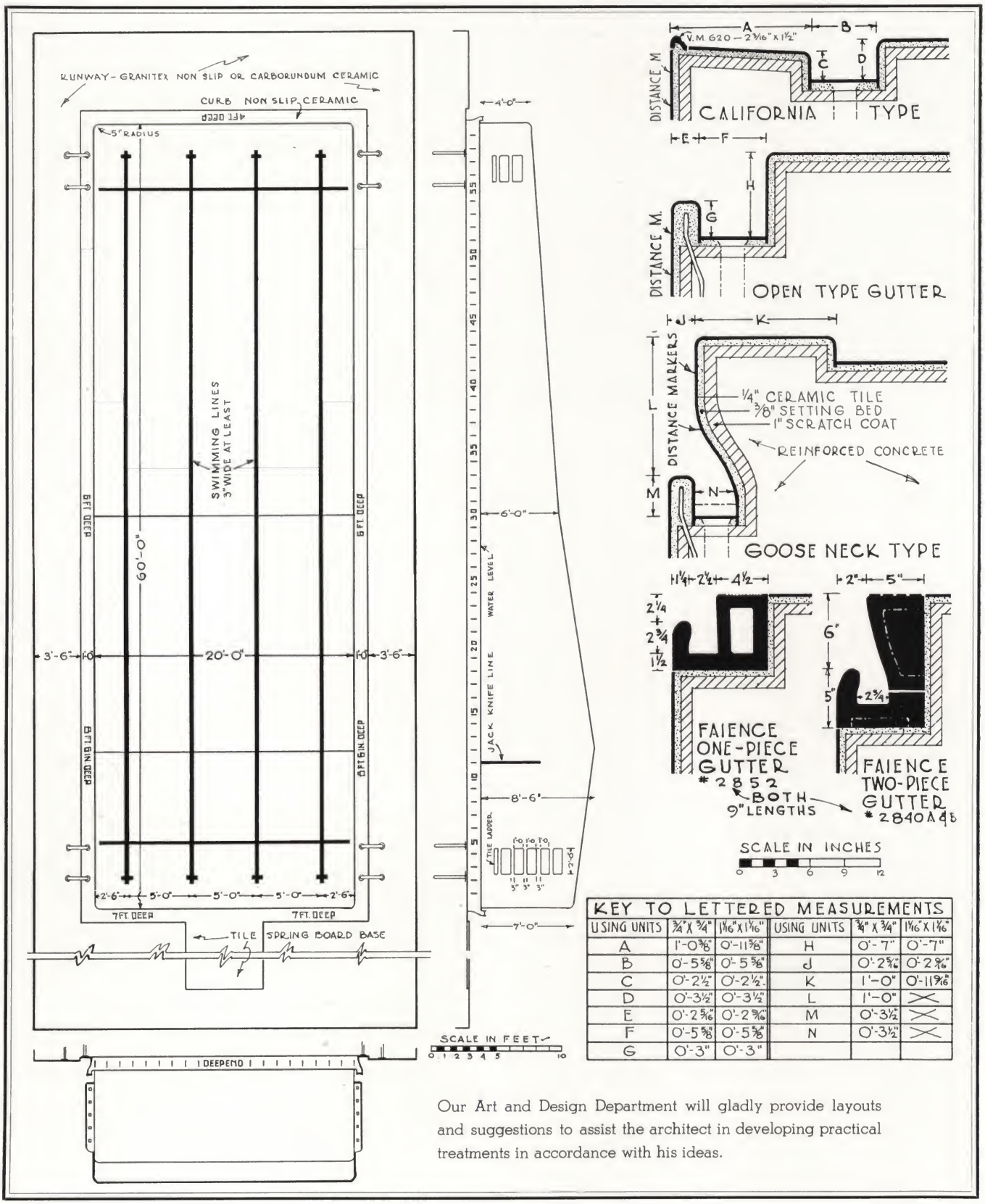


FLINT FLOOR DESIGN NO. 587

Field: 6 x 6 x ⅝″ Vitreous dust pressed Colors Gray Granite and Dark Green Velvetex No. 201.

Border: 6 x 6 Flint Color No. 201 and 3 x 3 Dark Gray Vitreous.

SWIMMING POOL DATA—The swimming pool treatment illustrated below is more or less a standard type. Many variations in shape and size can be accomplished through the use of different gutters and different types and sizes of tile. In addition to the small unglazed ceramic units generally used there is a wide selection of colors in glazed faience mosaics, hand made faience and unglazed granitex ceramics. A modest or generous amount of decoration can be developed to meet any requirements. See page 27.



KEY TO LETTERED MEASUREMENTS

USING UNITS	3/4" X 3/4"	1 1/16" X 1 1/16"	USING UNITS	3/4" X 3/4"	1 1/16" X 1 1/16"
A	1'-0 3/8"	0'-11 5/8"	H	0'-7"	0'-7"
B	0'-5 5/8"	0'-5 5/8"	J	0'-2 5/16"	0'-2 5/16"
C	0'-2 1/2"	0'-2 1/2"	K	1'-0"	0'-11 9/16"
D	0'-3 1/2"	0'-3 1/2"	L	1'-0"	X
E	0'-2 5/16"	0'-2 5/16"	M	0'-3 1/2"	X
F	0'-5 5/8"	0'-5 5/8"	N	0'-3 1/2"	X
G	0'-3"	0'-3"			

Our Art and Design Department will gladly provide layouts and suggestions to assist the architect in developing practical treatments in accordance with his ideas.

SWIMMING POOLS—The pools illustrated below show the wide variety of interesting treatments which can be achieved through the use of different kinds of tile. Unglazed ceramics and faience mosaics are weatherproof and are highly recommended for either interior or exterior installations. The matter of color combinations and design can be handled to suit individual tastes as indicated in the layouts which include elaborate marine scenes as well as simple geometric schemes. Colored sketches prepared without obligation.

The pool walls, a marine scene, are 1" x 1" faience mosaics in blues and greens with bright colored fish and foliage. Unglazed ceramics in random blues are used for the floor. The one piece faience gutter is unit No. 2852. See page 26.

The J. Marion West Pool.
Houston Texas.

The entire pool lining is made up of ¾" x ¾" unglazed ceramics; the wainscot is the same material in various shades of blue. Non-slip granitex in sand shades forms the runway.

Albion College.
Albion, Mich.
John D. Chubb, Architect.

Green Pool, Turtle Lake Farm, Michigan—Hewlett & Luckenbach, Architects.

An open type gutter is utilized in the pool at Patterson Field, Army Airport, as indicated below. A frieze in decorated faience occurs at the water line.

Patterson Memorial Pool.
Dayton, Ohio.
Schenck & Williams, Architects.

Faience mosaics graduating from dark blues at the water line to pale blue-green at the bottom create the pleasing illusion of added depth in the pool below.

Anton Hulman Jr. Pool.
Terre Haute, Ind.
Miller & Yeager, Architects.

STORE FRONTS AND BUILDING EXTERIORS — Mosaic offers in Glint tile in red body, Semi-Vitromat, Hand Crafted Faience and Faience Mosaics a wide variety of completely weatherproof tiles for exterior use. All the types listed above are available in either matt finish or bright enamel glazes. See color charts on pages 12 and 13 and pages 6 and 7 for faience colors. Glint tile patterns are shown in the lower right hand corner of this page. Permanence and easy maintenance added to interesting patterns and the dignity of rich colors makes for an ideal finishing material. If you are interested in discovering the possibilities in clay tile send us a rough measured drawing from which we will be glad to develop a treatment applicable to your particular project.

Hi-Speed Service Station, Flint, Mich.
Architect — John Mackenzie.

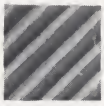
The filling station above is faced with faience mosaic in a combination of bright faience glazes. Glint tile in combination with Semi-Vitromat is used on the front of the Coca-Cola building as well as on the columns and bulkhead of the store shown at right.

Armstrong Clothing Company, Cedar Rapids, Iowa.
Architect — Harry E. Hunter.

The Elwood Coca-Cola Bottling Company. Elwood, Ind.

GLINT TILE PATTERNS

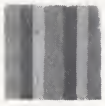
Glint tiles in red semi-vitreous body are made in fluted, ribbed and concave faces as shown below.



PATT. NO. 1001
4¼ x 4¼

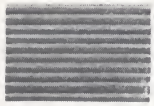
PATT. NO. 1002
4¼ x 4¼

PATT. NO. 1003
4¼ x 4¼



PATT. NO. 1004
4¼ x 4¼

PATT. NO. VM-626
4¼ x 4¼ Glint B. N.



PATT. NO. 1000
6 x 4

FAIENCE TILE IN LARGE UNITS for store fronts and building exteriors is now available in practically all of our regular glazes. The interesting variety of shapes both in flat and in trim units provides the designer with ample opportunity to create a front of dignity and color, one which will enjoy a favorable distinction in comparison with the almost identical schemes much in vogue at the present time. The pleasing texture and rich colors of faience are an excellent foil for the extreme bright finish of modern metals and plate glass. Demands in the new architecture for close straight joints can be met very successfully with our large faience units since they are available with either machine ground or hand finished edges.

At the left is illustrated a store front which features 12″ x 12″ units in color No. 6002 Bronze Faience. The bevelled units are 9″ x 3″ and are specified by No. 2892. The same shape with a flat band added on one side is manufactured 9″ x 4½″ and carries No. 2893. The ornament around the door can be executed in 1″ x 1″ faience mosaics or in black outline hand decorated large units.

Faience Front for Candyland.
Nashville, Tenn.

Bevelled Faience Feature at Entrance
Mosaic Tile Co., Los Angeles, Calif.

SCHOOL PLANNING and construction has developed to a commendable degree of efficiency. As suggested in the accompanying illustrations, tile has assumed a new importance where the intelligent application of color is desired in a material both durable and sanitary. The addition of cheerful colors can be accomplished through the use of different kinds of tile, each type chosen to meet certain specific requirements.

Thomas Street School, Lansing, Michigan
Warren S. Holmes Co., Architects

Nashua High School, Nashua, N. H.
Wells, Hudson and Granger, Architects

HOSPITALS—Ease of maintenance, permanency, and a wide selection of unobtrusive colors accounts in part for the ready acceptance of Mosaic tile in modern hospital construction. Satin matt wall tile or Mozane enamels make ideal wainscoting in operating, sterilizing, treatment and X-ray rooms, while ceramic mosaics, Ohio Flints or Ironstone leave nothing to be desired in a perfect flooring material. The Charity Hospital of Louisiana, illustrated in the Architect's drawing below, used approximately three hundred thousand square feet of Mosaic floor and wall tile throughout the project.

Nashua High School, Nashua, N. H.
Wells, Hudson and Granger, Architects

Charity Hospital of Louisiana, New Orleans, Louisiana
Weiss, Dreyfous and Seiferth, Architects

Menasha School, Menasha, Wisconsin
Foeller, Schober and Berners, Architects

THE CARLYLE TILE COMPANY
IRONTON, OHIO

QUARRY TILE in patterns as shown on the succeeding pages is becoming increasingly popular for floors where a large tile and a large scale pattern is desired. Modern building finds in Quarry tile an ideal combination of features, durability, modest cost and unlimited possibilities in color schemes of dignity. The new patterns shown are a welcome alternative to the plain unit solid color floors ordinarily specified. Trim units in addition to all standard flat sizes are available in the colors below. All work should be laid out with a joint approximately 3/8" wide.

Navajo Red
Shade No. 110

Egyptian Buff Flash
Shade No. 150

Oriental Red Flash
Shade No. 160

Mecca Brown
Shade No. 120

Greytone
Shade No. 140

Cinnamon Brown
Shade No. 130

Pompeian Buff
Shade No. 175

Russet
Shade No. 170

Chestnut Brown No. 195 →

Water Green No. 190 →

Antique Blue
Sh. No. 185

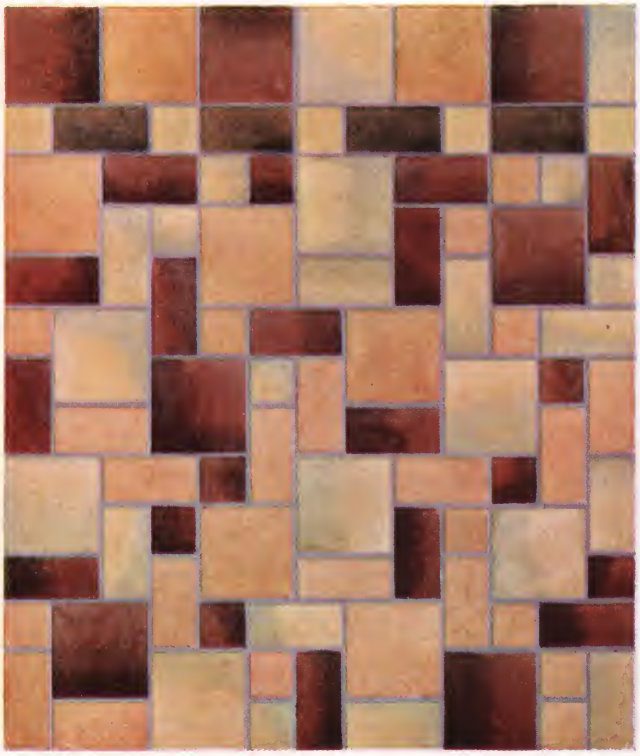
Black
Shade No. 180

Taupe Grey Flash
Shade No. 200

Neapolitan
Shade No. 215

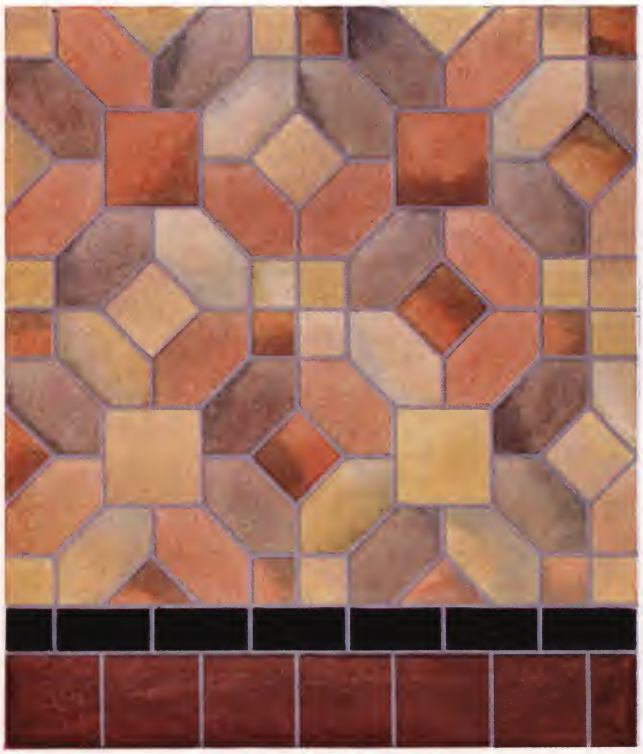
Suntan
Shade No. 210

THE CARLYLE TILE COMPANY



Field, Patt. No. 101-A — 6 x 6, 6 x 2¾, 2¾ x 2¾ Russet, Cinnamon, Egyptian and Oriental.
Border, Patt. No. 515-A — 6 x 2¾ Mecca, 2¾ x 2¾ Suntan; Margin, 6 x 6 same as field.
Use ⅜" joint.

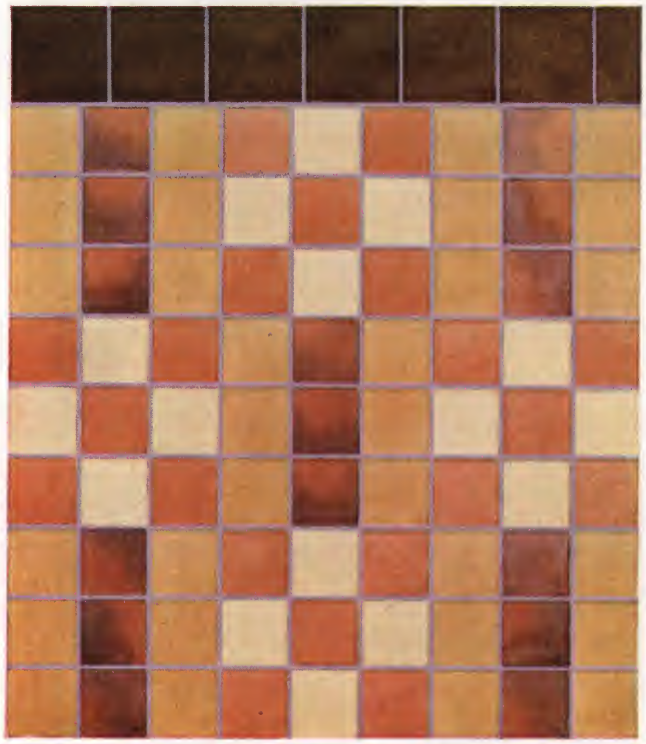
Field, Patt. No. 101-B — 6 x 6, 6 x 2¾, 2¾ x 2¾ Suntan, Egyptian, Cinnamon, Russet, Neapolitan, Morocco.
Border, Patt. No. 516-A — 6 x 2¾ Black, 2¾ x 2¾ Pompeian; Margin, 6 x 6 Morocco.
Use ⅜" joint.



Field, Patt. No. 107-A — 8 x 4 Elongated Hexagon, 6 x 6, 4 x 4, 2¾ x 2¾, 4" Diagonal Halves, Cinnamon, Russet, Egyptian, Suntan, Neapolitan, Morocco.
Border, Patt. No. 507-A — 6 x 2¾ Black; Margin, 6 x 6 Navajo Red.
Use ⅜" joint.

Field, Patt. No. 118-A — 6 x 6, 6 x 2¾ Russet, Cinnamon, Neapolitan.
Border, Patt. No. 502-A — 2¾ x 2¾ Suntan; Margin, 6 x 6 Navajo Red.
Use ⅜" joint.

THE CARLYLE TILE COMPANY



Field, Patt. No. 119-A — 4 x 4 Suntan, Russet, Cinnamon, Pompeian.
Border, Patt. No. 506-A — 6 x 6 Mecca.
Use 3/8" joint.

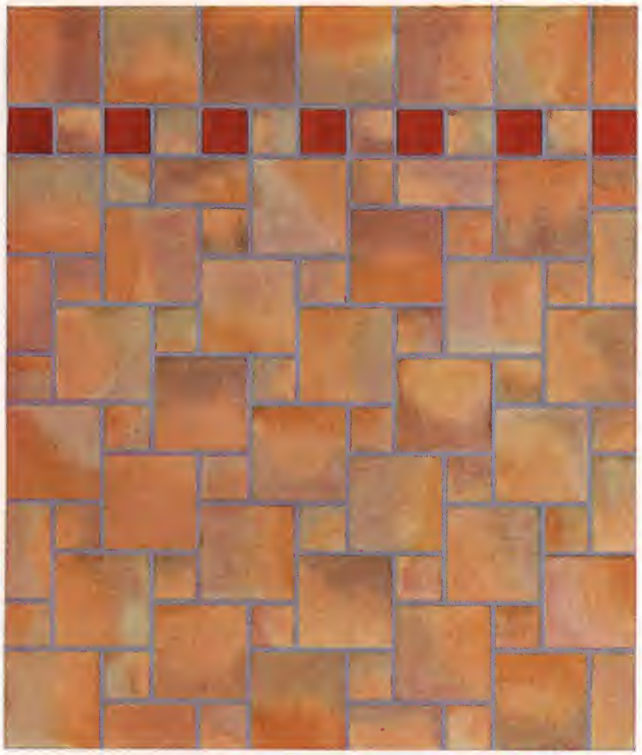
Field, Patt. No. 110-A — 4 x 4 Dusk and Greytone.
Border, Patt. No. 516-B — 6 x 2¾ Navajo Red, 2¾ x 2¾ Black; Margin, 6 x 6 Mecca.
Use 3/8" joint.

Field, Patt. No. 118-B — 6 x 6, 6 x 2¾, 2¾ x 2¾ Egyptian, Russet, Pompeian.
Border, Patt. No. 502-B — 2¾ x 2¾ Cinnamon; Margin, 6 x 6 Egyptian.
Use 3/8" joint.

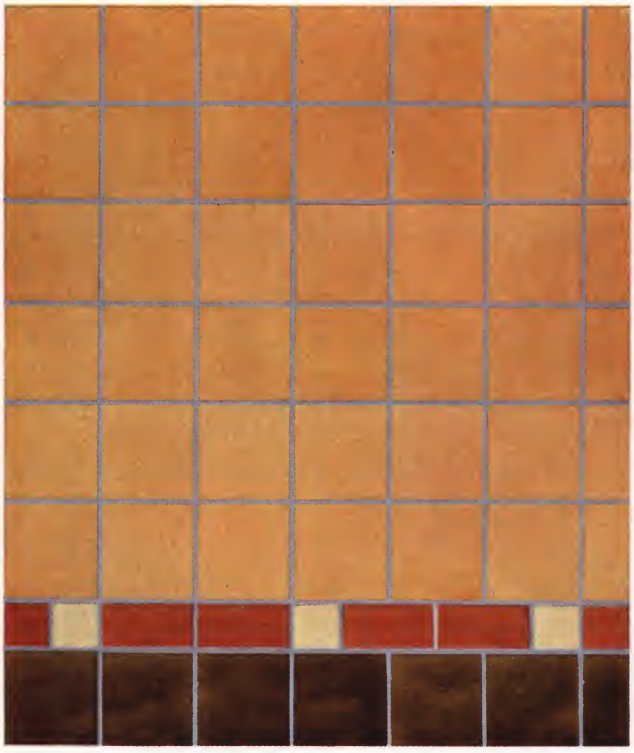
Field, Patt. No. 120-A — 9 x 9, 6 x 6, 6 x 2¾, 2¾ x 2¾ Egyptian, Taupe, Black.
Border, Patt. No. 515-B — 6 x 2¾ Pompeian, 2¾ x 2¾ Black; Margin, 6 x 6 Morocco.
Use 3/8" joint.

THE CARLYLE TILE COMPANY

Field, Patt. No. 117-A — Elongated Hexagon short Halves, 1¾ x 1¾ Dots, Oriental Red Flash.
Border, Patt. No. 505-A — 6 x 2¾ Oriental Center Border, 4 x 4 Russet, 4″ Diagonal Halves Egyptian; Margin, 6 x 6 Oriental.
Use ⅜″ joint.



Field, Patt. No. 102-A — 6 x 6, 2¾ x 2¾ Egyptian.
Border, Patt. No. 502-C — 6 x 6 Egyptian, 2¾ x 2¾ Egyptian and Navajo Red.
Use ⅜″ joint.



Field, Patt. No. 100-A — 6 x 6 Suntan.
Border, Patt. No. 516-C — 6 x 2¾ Navajo, 2¾ x 2¾ Pompeian; Margin, 6 x 6 Mecca.
Use ⅜″ joint.

Field, Patt. No. 115-A — 6″ Hexagon and Halves, Neapolitan.
Border, Patt. No. 507-B — 6 x 2¾ Mecca; Margin, 6 x 6 Morocco.
Use ⅜″ joint.

SWAN WHITE

COLOR NO. 6028

There are many accepted shades of white on the market, most of which are actually in the off-white range. We have created in Swan White a new, improved, highly craze-resistant glaze vastly superior in purity and opacity to the regular white glaze wall tile. The texture is an improved happy medium between the high gloss of the enamels and the satin finish of the matts.

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SERVICE—Our designers will develop layouts or submit colored sketches for your individual requirements.

LITERATURE AVAILABLE—"Suggested Specifications" contains detailed specifications for all types of installations and uses, together with detail sheets showing good installation practices.

SERVICE FOLDERS—For AIA File 23-A offering size and color data, hand decorated designs, accessories, etc.

Our representatives will gladly assist architects with tile specifications.

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GLAZED WALL AND FLOOR TILE

⅜" Thick Non-Vitreous Body
600 LINE Matt Glaze and 800 LINE Bright Glaze

SIZES
4¼"x4¼", 6"x3", 6"x6"
3"x3", 4¼"x2 1/16", 2 1/16"x2 1/16"
Trimmers

USES
Interior Walls and Ceilings

½" Thick Non-Vitreous Body
1600 LINE Matt Glaze and 1800 LINE Bright Glaze

SIZES
4¼"x4¼", 3"x3", 4¼"x2 1/16", 2 1/16"x2 1/16"
2" Hex., 3" Hex. and 3¾" Hex.
Trimmers

USES
Interior floors subject to light use

½" Thick Semi-Vitreous Body 2600 LINE Matt Glaze and ¼" Thick Semi-Vitreous Body 2800 LINE Bright Glaze

SIZES
4¼"x4¼", 3"x3", 4¼"x2 1/16", 2 1/16"x2 1/16", 2", 3" and 3¾" Hex., 3" Oct. and 4¼" Oct.
CERAMIC MOSAIC Same sizes as Unglazed Ceramic Mosaic
Trimmers

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Interior or Exterior Walls, Swimming Pools, Store Fronts, Subways, Kitchen Sinks, etc.
Floors subject to light traffic

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A wide and distinctive range of Mist-Tones, Pastels and other popular colors
Color Board of actual Wall Tiles furnished gratis

CERAMIC MOSAIC AND PAVERS

¼" Thick Unglazed Vitreous Body
IMPER-VIT
CERAMIC MOSAIC

SIZES
⅜"x⅜", ¾"x¾", 1 9/16"x¾", 1 9/16"x1 9/16"
½"x½", 1 1/16"x½", 1 1/16"x1 1/16", 2 3/16"x1 1/16", 2 3/16"x2 3/16"
2 3/16"x1 9/16" "Octelon"
1" Hex., 1¼" Hex., 2" Hex., 1 3/16" Rounds
Trimmers

USES
Floors and all surfaces subject to hard use
Interior or Exterior Walls, Swimming Pools, Subways, Kitchen Sinks, etc.

½" Thick
PAVERS
Vitreous and Semi-Vitreous Floor Tile

SIZES
2" Hex., 3" Hex., 2⅛"x2⅛", 3"x3"

USES
Interior or Exterior Floors—subject to hard use

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For Kitchens and Bathrooms
Recessed and projecting types. Grilles and Switch Plates

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SNOWHITE WALL TILE

This revolutionary advance in wall tile manufacture is procurable in white, and 24 beautiful bright and matt colors. There have been no failures due to "crazing," or other defects, during the three years it has been on the market. It is considered a standard unsurpassed in wall tile manufacture.

It is obtainable in all the regular sizes from 2-in. squares up to and including 6 x 12 in.

A complete line of trimmers is supplied in all popular cap and base sizes with necessary corners, stops, etc.

For a small premium of 10%, a two-year certificate of guarantee against "crazing" will be furnished by the company. This assumes the cost of complete replacement of any installation if the glaze should fail.

Architect's specifications for quality wall tile will be gladly furnished at your request.

Bathroom Detail—"Bermuda Tile"

FLORMATEX and FLORTEX

Flormatex was introduced by Robertson about six years ago. This semi-vitreous, matt glazed tile for bathroom floors has met a need for colors and patterns which would blend perfectly with wall tile treatments.

Flortex is a newly developed matt glazed floor tile in larger sizes, namely 3 and 4-in. squares, hexagons and octagons. It classifies as a non-vitreous tile, but is much harder than our wall tile body and can be soaked properly in water before laying. The glazes are non-crazing and indestructible, and the perfect sizing and straightness obtainable in this higher absorption tile makes it ideal for bathroom floors.

We do not recommend any glazed tile surface for floors where the abrasion of traffic occurs.

THE INTRODUCTION OF "BERMUDA TILE"

"Bermuda Tile" is our outstanding contribution of something new in wall tile for 1939. The above illustration gives only a faint suggestion of the decorative effects obtainable.

It fulfills a need for a wall tile which can be carried above the usual wainscot height to the ceiling without creating a cold or monotonous wall. Sanitary permanence is thus achieved without sacrificing decorative effects, thus enhancing their value.

The tile has a background glaze in a light tint of the wainscot color with a soft-toned line design in the same glaze and color as the wainscot, giving the effect of some of the more successful antique wallpaper types of decoration. This is not achieved with ordinary overglaze decoration which would thus be susceptible to wear. The surface has an all-over glaze smoothness obtained through one high temperature glaze firing treatment for the entire surface.

It is introduced with four designs which can be chosen in any one of our popular matt glaze color combinations. The effect is something entirely new in wall tile treatment. Let us send you more detailed information about this new product. It will be used in a beautiful bathroom display at the New York World's Fair.

BATHROOM ACCESSORIES

A complete line of containers, brackets, lighting fixtures, etc., in tile body glazed to match or blend in any color treatment; also a new electric heater with tile front.

SUPROTILE

A vitreous wall tile in white and colors designed for heavy duty in and out of doors. It is unaffected by moisture, excessive heat or freezing temperatures.

TREDTEX

A non-slip floor tile made especially for safety in public and private swimming pools and showers —practical, sanitary, durable; supplied in the regular floor tile colors.

THE SPARTA CERAMIC COMPANY

EAST SPARTA, OHIO

OFFICES IN PRINCIPAL CITIES

SPARTA CERAMIC TILE

Description

Sparta Ceramic Tiles are ceramic mosaic tiles manufactured of pure shale and clay by the plastic extruded process and fired at a high temperature. Possessing the qualities of ruggedness, impermeability, resistance to slip and craze, and a high degree of vitrification, Sparta products may be employed in decorative combinations of both glazed and unglazed tiles for every type of interior and exterior use. For unusual applications, special shapes, sizes and colors will be developed upon order. Standard Sparta products are listed below.

Sparta Ceramic Mosaics—Unglazed ceramic tile available in a wide range of standard and special colors and sizes for every type of interior and exterior use. Four sizes of Sparta Ceramic Mosaics are available with cushion or fettle edge.

Sparta Faiencettes—Highly vitrified matt glazed ceramic tile in eleven colors in smaller sizes with appropriate trim shapes.

Sparta Stri-Lief—Unglazed extruded tile with one face in striated relief, available in three sizes and all Sparta colors for use in combination with other Sparta tiles. It has the same maximum thickness as Sparta Ceramic Mosaic.

Corrugated Tiles—Non-slip tile available in four sizes, and all Sparta colors. Includes a non-slip safety tread equipped with a series of ribs which project from the face of the tile.

Decorated Inserts—Decorative tile with design and color in relief either wholly or partially glazed, available in standard or special patterns in a wide range of colors and three sizes for use in combination with other Sparta Tiles.

Trim Shapes—Inclusive range of angles, bases, caps and moldings offering a choice of treatments for all usual conditions.

Tile Accessories — Bathroom accessories available in all Sparta Ceramic Mosaic Tile colors.

Ceramic Base—⅜ in. thick vitreous unglazed base for plaster walls set either flush or with ⅛ in. projection.

Characteristics and Use

Texture—Because of the extruded process of manufacture, Sparta Tiles have a slight irregularity in surface texture. This tends to give them a higher co-efficient of friction than ordinary tile, and consequently makes them especially suitable for use in floors where the hazard of slip is an important consideration — public corridors, shower and bathrooms, swimming pools, hospitals and kitchens.

Shape—Method of manufacture causes very slight irregularities in tile shapes and sizes, lending interest to the surface pattern and concealing normal irregularities in application.

Impermeability — Sparta Tiles vary slightly in degree of vitrification. Absorption, depending on color, ranges from 0 to approximately 3%. Their surface will withstand severe abuse without fracture or blemish, and is impervious to uric acid and body oils. Sparta Faiencettes, in addition, are frost-proof.

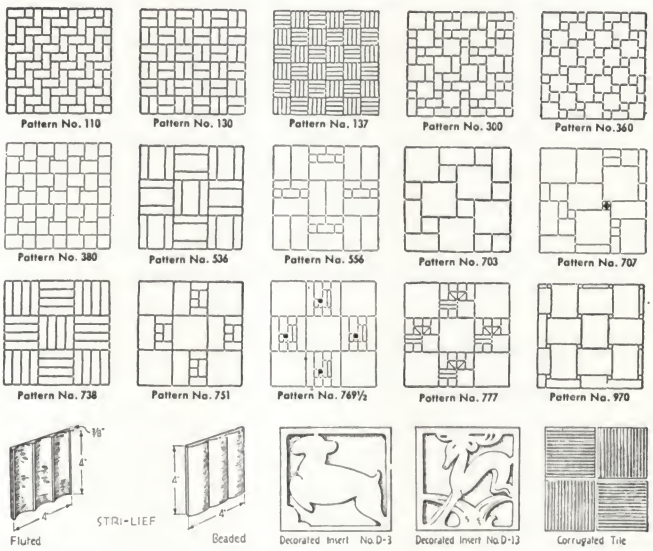
Utilization in design of these inherent characteristics plus the variants of color, pattern, and special forms will give endless variety in application of Sparta Tile.

I — COLOR RANGE

Fire-Flashed Colors	Plain Colors	Faiencettes
are integral with the tile, not applied in glaze. No two units are identical in color. Each unit is shaded from dark to light. Available in Sparta Ceramic Mosaics and accessories.	are integral with tile. All units solid, even color. Available in Sparta Ceramic Mosaics and accessories	Color applied in matt glaze. Units vary in tone and depth of color as in hand-made tile. Available in Faiencettes only.
Silver Gray Variegated medium grays	*Red*	*White*
Golden Pheasant Light to dark buff, some with gray, green or reddish cast	*Random Reds* *Light Gray* *Medium Gray* *Dark Gray*	*Black* *Amber* *Ivory*
P.O. Brown Warm tan to brown	*Black* *Buff* *Ivory*	*Ming Green* *Persian Brown* *Chocolate*
Lustro Brown Similar to P.O. Brown but darker tones	*Brown* *Blue*	*Coral* *Tang Red*
Moki Reds, from medium through to deep purples	*Random Blues* *Green* *Random Green*	*Light Blue* *Royal Blue* *Tan* *Bronze*

Men's Toilet in the Christian Science Publishing Bldg., Boston, Mass.
CHESTER L. CHURCHILL, Architect

TYPICAL SPARTA PATTERNS AND INSERTS



Recommended Setting Practices

Sparta Tiles are shipped mounted on paper sheets in the desired pattern and ready for setting. They are set by the floating method of application.

Vertical Surfaces

Vertical surfaces require adequate preparation and application of a scratch coat and a float coat. For wood studding stretch painted or galvanized wire lath (preferably without backing) tight and secure with fastenings not less than seven inches apart. For masonry construction prepare surface reasonably true and fairly rough, clean and moisten. For gypsum block, wallboard, etc., stiffen with lath securely fastened over a layer of building paper.

Scratch Coat—Even surface with scratch coat at least ¼ in. thick of mortar composed of one part of cement and 2½ to 3 parts of sand applied not less than 24 hours, nor more than 48 hours, before setting. While still plastic score deeply.

Float Coat — Apply float coat composed of 1 part Portland cement, ½ to 1 part lime putty, and 3 to 4 parts sand to scratch coat thoroughly moistened, only in quantity which can be covered with tile before the initial set. Trowel a skim of neat Portland cement to the float coat or the back of each unit of tile immediately before application.

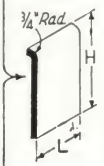
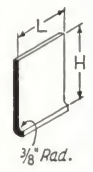
Joints—Fill joints on each sheet of tile with dry Portland cement. Back each sheet with thin coat of neat cement paste. Grout joints between individual tiles and between sheets uniform, flush and true. Joints of Sparta tiles will vary slightly in thickness and should be somewhat greater than 1/16 in., particularly in large tile sizes. When size of joint is an important design consideration, specify size.

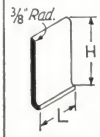
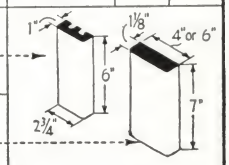
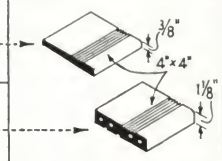
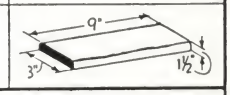
Horizontal Surfaces

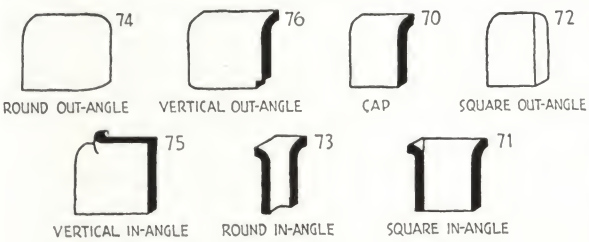
Horizontal surfaces require adequate preparation and application of a mortar bedding coat. For wood construction apply a layer of building paper covered with shrinkage mesh, fasten securely and lap at the edges. For concrete or masonry construction prepare level surface, reasonably smooth and clean. For steel joist or pressed steel floor systems cover with reinforced concrete slabs.

Mortar Setting Bed—Apply setting bed composed of 1 part Portland cement and 3 to 4 parts sand, and not less than ¾ in. thick (minimum for wood construction 1¼ in.), and spread absolutely true. Apply only in quantity which can be covered with tile before its initial set. Lay tile sheets to a straight edge after dusting Portland Cement uniformly over surface of mortar-setting bed. Finish joints as specified for vertical surfaces.

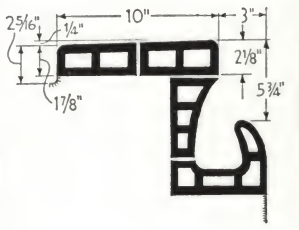
II - TRIMMER SIZES *and* SHAPES

STOCK NUMBER AND PURPOSE	SHAPE	DIMENSIONS H	DIMENSIONS L
10 COVE 5/8" Rad.		5/8"	2"
4110 " 1" "		1"	4"
6110 " 1½" "		1"	6"
20 QUARTER ROUND *or outside combination*		1"	6"
4230 BOX CAP		2"	4"
30 BULL NOSE *or outside combination*		1¾"	2"
4430 BULL NOSE *or outside combination*		4"	4"
6230 BULL NOSE *or outside combination*		2"	6"
6430 WAINSCOT CAP *or Base or outside combination*		4"	6"
6630 CAP or BASE *(Round top straight bottom)*		6"	6"
40 BASE *or inside combination*		1⅜"	2"
4240 "		2"	4"
4440 "		4"	4"
4640 "		6"	4"
6240 "		2"	6"
6440 "		4"	6"
6640 "		6"	6"
80 "		2⅜"	2"

STOCK NUMBER AND PURPOSE	SHAPE	DIMENSIONS H	DIMENSIONS L
50 CAP		2¼"	2"
60 CAP		1⅝"	2"
4360 WAINSCOT CAP		3"	4"
70 CAP *or outside combination*		2¾"	2"
4490 BASE *or inside combination*		4"	4"
4690 "		6"	4"
6490 "		4"	6"
6690 "		6"	6"
S-13 PLINTH *or Drain board member*			
S-15 PLINTH			
S-14 STAIR NOSING			
S-18 STAIR NOSING			
S-19 THRESHOLD			



TYPICAL ANGLES for all Sparta Trim



TILE GUTTER

III - STANDARD SIZES *and* SHAPES

	4"×4"	4"×3"	4"×2"	4"×1"	4"×½"	2"×2"	2"×1½"	2"×1"	2"×½"	1"×1"	1"×½"	½"×½"
Regular	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cushion Edge	✓	✓	✓			✓						
Stri-Lief	✓		✓			✓						
Faiencettes						✓		✓		✓		
Corrugated			✓			✓		✓		✓		
Glazed Cer.					✓			✓	✓	✓	✓	✓
Decorated Inserts	✓		✓			✓				✓		

HOW TO BUY

Choice of patterns, colors, sizes, etc., can most readily be made from sample panels which will be submitted according to specification. For installation refer to outline of recommended practices on accompanying page or Basic Specification K-300 issued by the Tile Manufacturers Association. THE SPARTA CERAMIC COMPANY maintains branch offices in 12 cities, and an Architectural Service Department which furnishes recommendations on selection, design and installation upon request.

THE TILE MANUFACTURERS' ASSOCIATION, INC.

19 West 44th Street, NEW YORK, N. Y.

AMERICAN ENCAUSTIC TILING CO., INC.
CARLYLE TILE COMPANY
FRANKLIN TILE COMPANY
GLADDING, McBEAN COMPANY
GLIDDEN-CLAYCRAFT TILES
HANLEY COMPANY
B. MIFFLIN HOOD COMPANY
MATAWAN TILE COMPANY
THE MOSAIC TILE COMPANY
MUELLER MOASIC COMPANY
MURRAY TILE COMPANY
NEWTOWN TILE COMPANY
OLEAN TILE COMPANY
PENN TILE WORKS COMPANY
THE SPARTA CERAMIC COMPANY
THE STANDARD TILE COMPANY
U. S. QUARRY TILE COMPANY
WENCZEL TILE COMPANY
WHEELING TILE COMPANY

In addition to providing the services and information listed below, THE TILE MANUFACTURERS' ASSOCIATION invites inquiries from architects, designers, engineers and specification writers on questions regarding the use, application or consideration of Tile.

ARCHITECTURAL CONSULTANTS

Realizing the difficulty of acquiring a complete knowledge of the varied shapes, sizes, types and colors of modern ceramic Tile, THE TILE MANUFACTURERS' ASSOCIATION maintains two architectural consultants whose services are available on request. One is located in New York; the other in Washington, D. C. These men are well versed in Tile design and application, and have a thorough knowledge of its adaptability.

SPECIFICATIONS

To every architect receiving the 1938 "SWEETS," was sent a copy of the 24-page "Basic Specification for Tile Work—K-300" —1937 edition (A.I.A. File No. 23a). In the preparation of this specification, we acknowledge the assistance of architects, contractors and manufacturers in helping make it complete in every respect. If your office does not have a copy, we will gladly send one on request.

Architects contemplating swimming pool projects are invited to ask for specification No. K-301.

DESIGN INFORMATION

Many members of THE TILE MANUFACTURERS' ASSOCIATION maintain individual design departments. These tile designers understand how Tile can be used to gain desired effects, and are able to work up the architect's own ideas using, as far as possible, standard shapes, colors, textures and sizes. On request, they are prepared also to make color sketches and rough detail drawings. Representatives of any member factories will be glad to gave further details on their service.

The Association's architectural consultants can give information on what is generally available throughout the industry; the manufacturers' design departments will give specific information on their own products.

RESEARCH

Under the supervision of The Tile Industry Research Bureau and a Professor of Ceramics, THE TILE MANUFACTURERS' ASSOCIATION maintains a Research Laboratory at Rutgers University. Much time is devoted to studying the proper application of Tile under unusual conditions of use and exposure, and to methods of installation, mortars, etc. Manufactured tile is also tested for its qualifications and adaptabilities. On request, any manufacturer will present architects with a certificate of test from this laboratory.

The Tile Industry Research Bureau is always ready to assist in solving problems of a technical nature. Requests should be sent to the Association's office in New York.

SHOWROOMS

THE TILE MANUFACTURERS' ASSOCIATION maintains two extensive permanent tile displays: one in the Treasury Building in Washington, D. C., and one in the Merchandise Mart in Chicago. Most member companies have their own display rooms in New York, Chicago and other large cities. Also a large number of Tile Contractors throughout the country have local display rooms.

In the Model Village of America, at Atlantic City, will be found an extensive exhibit showing a variety of residential applications of Tile in different styles of homes.

CONTRACTORS

Since proper workmanship is an essential factor in good installations, architects are referred to qualified Tile contractors who are available in every section of the country. Many of these contractors have their own showrooms, and also are qualified to assist architects in design, selection and specification.

On every job, where standard grade tile is used, architects should ask the Tile contractor to furnish the Association Grade Certificate, for the particular tile used, signed by both the manufacturer and the contractor.

A NEW THIN SETTING-BED FOR FLOOR TILE

THE TILE MANUFACTURERS' ASSOCIATION takes pleasure in announcing a new cement—Latyle—which permits Tile flooring installations on a setting bed from $\frac{1}{16}$ to $\frac{3}{8}$ in. thick. "Latyle," developed through several years of cooperative research by the Tile Industry Research Bureau and the Barber Asphalt Corp., has been thoroughly tested in actual installations. It is a special type of emulsified asphalt used with portland cement to form the setting bed for exterior or interior installations in hot or cold climates. It is intended for floor installations only.

Latyle Cement can be used directly over wood, steel or cement surfaces, as well as over old floors of terrazzo, natural stone or tile. It is particularly adapted to modernizing work, but has equal application in new construction where minimum over-all floor thickness is required or where weight saving is essential.

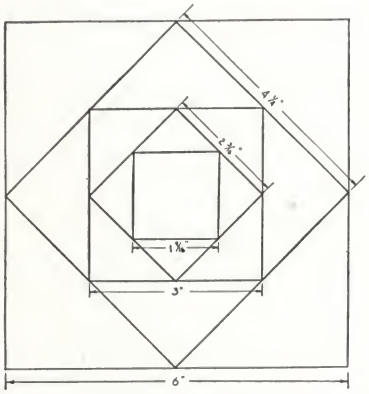
Full details are found in Research Bulletin R-TS-51, copy of which will be sent on request.

GENERAL

The term "Tile" includes all kinds of glazed and unglazed nonstructural units which are made exclusively from clay and/or other ceramic materials, and are burned in the course of manufacture. They are used for interior or exterior finish and decoration, generally on walls and floors.

During the development of the Tile industry since almost prehistoric times, there has arisen a nomenclature peculiar to this product. It is not intended here to define such terms as Faience, Ceramic Mosaic, Quarries, Flints, Pavers, etc., or degrees of vitreousness and other properties. Such information is found in the catalogues of individual manufacturers.

The classification below, on the basis of use and application, will assist architects and others in selecting the general type of Tile desired.



PHYSICAL CHARACTERISTICS

Tile is fireproof, waterproof, greaseproof and verminproof, and has thoroughly demonstrated its wear-resistance, sanitation, ease of cleaning and practically negligible maintenance.

SIZES

In general, sizes of Tile are based upon a geometric retrogression from a 6-in. square—an inheritance from medieval potters, which is still in use today. This relationship in dimensions permits wide scope in design and pattern within a given area. Actual shapes and dimensions of tile are listed in the catalogues of manufacturers, which will be furnished on request by any of the companies listed.

To meet the requirements of angles, corners, recesses, etc., there are a variety of standard Tile shapes known as "trimmers." The Association will furnish on request a dimensioned chart of "trimmers." This information is also included in practically all manufacturers' catalogues.

COLORS

No attempt will be made here to discuss the many colors, blends and combinations, or the varied finishes, textures and glazes obtainable in modern Tile. For this architects are referred to the catalogues of member companies and to the many display rooms throughout the country. (See preceding page.)

Standard colors of bathroom, plumbing and kitchen equipment can be matched. Standard colors are designated by numbers as well as names. Special colors can be obtained upon request.

CLASSIFICATION OF TILE

GENERAL

In general Tile may be classified as "exterior" or "interior" and as "wall" and "floor." Attention is directed to the Simplified Practice Recommendation R61-30 of the U. S. Department of Commerce for further details on grades and grade specifications adopted by the Tile Industry in cooperation with the U. S. Bureau of Standards.

INTERIOR WALL TILE

Tile for this use is manufactured in four standard sizes, 4¼ x 4¼ in., 6 x 3 in., 6 x 6 in., and 6 x 12 in. These tiles are usually glazed, with either a matte or bright glaze finish and are obtainable in various colors. Glazed faience tile are usually available in sizes ranging from 1 x 1 in. to 12 x 12 in. in an even wider range of colors. Glazed and unglazed ceramic mosaic tile is also used on walls, especially where graduated shaded effects are desired. Base, cap, strips and other trim shapes are available to meet structural requirements.

INTERIOR FLOOR TILE

Many different types of tile are used for flooring but the one in most common usage is Ceramic Mosaic Tile. This type is manufactured in small units. For delivery to the job, many of these units or tiles, are pasted on sheets of paper about 1 x 2 ft. in size. This not only greatly simplifies the tile setters labor, but assures that designs will be accurately followed, as the tile are pasted-up at the factory in the patterns desired. Because of the small units and wide color range practically any design can be obtained.

Glazed ceramic mosaic and glazed faience tile are also used as flooring. However, glazed tile should never be used on areas subject to hard wear.

Quarry tile is manufactured in sizes ranging from 1 x 1 in. to 12 x 12 in. It is particularly adapted to use on school and hospital floors and on the floors of public buildings. This tile is also used for porch and vestibule floors and sometimes on wainscots in corridors of public buildings. When floors are subjected to heavy wear, as in industrial plants, garages and basements, a Paver type of tile may be used. Trim shapes are made to fit all conditions where floor tile is used.

EXTERIOR WALL TILE

Weatherproof tile manufactured in standard sizes 4¼ x 4¼ in., 6 x 3 in. and 6 x 6 in. are available for exterior work. Weatherproof faience in various sizes is also manufactured for exteriors. When water is present under freezing conditions weatherproof tile should always be used. Ceramic mosaic tile which meets weatherproof tests, is largely used on exterior installations, such as swimming pools and fountains, etc.

EXTERIOR FLOOR TILE

For walks, terraces, roof decks, etc., quarry tile or weatherproof faience in various sizes is also manufactured for exteriors. tile are also available for such installations as walks around swimming pools, exterior stairways, etc.

SPECIAL APPLICATIONS

The decorative possibilities of tile and its well-known resistance to wear will indicate many other applications where its physical properties, unfading colors and flexibility in design can be used to interpret the architect's plans and ideas. Many of these applications will be found in the manufacturers' catalogues. The Association, or any member, will be glad to assist in developing proper specifications for unusual installations.

UNITED STATES QUARRY TILE COMPANY

Manufacturers of Romany Tiles for Floors and Walls

CANTON, OHIO

BRANCH OFFICES

NEW YORK, N. Y., 110 East 42nd Street
PHILADELPHIA, PA., 2402 Market Street
NEEDHAM, MASS., 125 Birds Hill Avenue
CLEVELAND, OHIO, Room 410, 5005 Euclid Avenue
MT. VERNON, OHIO, 31 East Gambier Street
CHICAGO, ILL., 5 West Hubbard Street
MIAMI, FLA., 810 Professional Building
HOUSTON, TEX., 414 M. & M. Building
LOS ANGELES, CALIF., 734 No. Highland Avenue
SAN FRANCISCO, CALIF., 721 Bryant Street
PORTLAND, ORE., 630 N. W. 10th Street

FACTORIES: PARKERSBURG, W. VA., and EAST SPARTA, OHIO

Members of Tile Manufacturers Association

Quarry Tiles
Glazed Wall and Floor Tiles

ROMANY TILES
TRADE-MARK

Bathroom Accessories, Clay
Bathroom Accessories, Chromium
Inserts, Glazed and Unglazed

ROMANY QUARRY TILES

GRADES

Romany Standard

These tiles are sound and solid in every particular. Approximately level and regular in their lines with only slight variation in lengths, widths and shades.

Romany Standard Perfected Four Sides

These tiles are especially made and selected to set with close joints.

Round edge tiles will be furnished when required.

COLORS

Romany Rainbow

Colors range from light buff through tan and orange to dark brown, and there is a pleasing variation of color over the face of each tile. They may be selected, if preferred, in "Dark Blend," "Light Blend" and "Full Range." Also Gray Blend and Brown Blend.

Romany Redflash

Tiles are supplied in a full range of colors from deep red to brown and gunmetal on a red background. There is a distinct variation in shading over the face of the tiles.

Romany Gray

Tiles are extensively used both alone and in combination with other Romany colors.

Romany Brown

Tiles are of a soft, pleasant almost chocolate color.

Romany Black

Tiles are a dull matt black.

Romany Red

Tiles are a deep rich red in color and are furnished in light red, medium red or dark red.

Romany Veined Tiles

These tiles were developed to meet the decorative requirements of the very finest interiors. They have the same smooth, wear-resisting surface which is characteristic of all Romany Quarries and, in addition, have a rich veining which extends through the entire thickness. This veining gives a texture, or all-over effect, which harmonizes with other decorative material.

Romany Veined Tiles are made in gray and red body colors at present, and furnished at no increase in cost.

SIZES (INCHES) AND SHAPES

Square Tiles
12 x 12 x 1⅛
5¾ x 5¾ x 1⅛
9 x 9 x ⅞
8 x 8 x ⅞
6 x 6 x ¾
4 x 4 x ¾
4 x 4 x ½
2¾ x 2¾ x ¾
2¾ x 2¾ x ½
1¾ x 1¾ x ¾
1 x 1 x ¾

Rectangular Tiles
6 x 12 x 1⅛
5¾ x 12 x 1⅛
6 x 9 x ¾
2¾ x 6 x ¾
2¾ x 6 x ½
1¾ x 4 x ¾

Stair Treads
12 x 12 x 1⅛
6 x 12 x 1⅛
9 x 10¼ x 1⅛
6 x 6 x 1⅛

Hexagon Tiles
4 x 8 x ¾
9 inch 6 inch

All halves and other shapes necessary to completion of pattern designs are furnished at same price per square foot as whole hexagon tiles.

Diagonal halves of all square tiles are furnished.

ROMANY GLAZED TILES, DUST PRESSED

Unusually Durable and Craze Resisting for Walls and Floors

Romany Glazed Wall and Floor Tiles represent a decided forward step in the manufacture of this type of tile. The biscuit or body of the tile is so compounded that its coefficient of expansion and contraction is practically identical with that of the glaze coating. Due to this fact and the extremely high temperature at which the tiles are fired, an unusually durable tile is produced.

Sizes (in Inches)

Plain or cushion edge, 6x6, 6x3, $4\frac{1}{4}$x$4\frac{1}{4}$, 3x3, $4\frac{1}{4}$x$2\frac{1}{16}$, $2\frac{1}{16}$x$2\frac{1}{16}$.

Plain edge. 3-in. hexagon.

A complete line of wall tile trimmers is manufactured in the usual shapes and all tile colors.

A Typical U. S. Quarry Tile Installation Employing Romany Glazed Tiles

The Lincoln or Midtown Tunnel illustrated is one of many outstanding installations of Romany glazed tiles. We are justly proud of our record on this job, and although the requirements were exacting and the inspection critical, not a single piece of tile was rejected.

Principal Data

Length of first or south tube, portal to portal.....8215 ft.
Length of tube under river approximately.....4600 ft.
External diameter of cast iron and cast steel shell..... 31 ft.
Width of roadway.....21½ ft.
Maximum depth of roadway below surface of river..... 97 ft.
Glazed Tiles for sidewalls of south tube over 200,000 sq. ft.
Colors of tiles used, light cream for body, blue for borders.

Lincoln Tunnel Under the Hudson River Between New York and New Jersey

Designed and constructed by The Port of New York Authority — Del Turco Bros., Inc., Harrison, N. J., Tile Contractor

BATHROOM ACCESSORIES

A complete line of clay bathroom accessories which are colored and glazed to harmonize with Romany Glazed Wall Tiles; white, black and colored pyralin towel bars; opal, clear crystal and black glass shelves are always available. We also furnish a complete line of chromium accessories.

MEMORANDA

SANIMETAL TILE CORPORATION

Manufacturers of Sanimetal Tile for Walls and Ceilings

101 Park Avenue

NEW YORK, N. Y.

The First Step
Applying the special oil cement over surface to be tiled

The Second Step
Pressing the individual tile blocks into position

The Third Step
Cutting or bending the tiles to fit around obstacles

DESCRIPTION

Each tile is separate. (Not a sheet or panel tile.) Made from 28 gauge steel, tin coated on both sides. Surface of tile is finished with three coats of durable baked-on enamel.

SIZES AVAILABLE

Tile: 4¼″ x 4¼″, 6″ x 6″, 3″ x 6″.
Borders: 12″ x 2¼″, 9″ x ¾″, 3″ x 2¼″.
Corners: 12″ long (when installed only the bead of corner is visible).
Base: 6″ x 6″ and 4¼″ x 4¼″, coved at bottom.
Shipping weight approximately ¾ lb. per sq. ft., packed in cartons.

COLORS

Plain standard colors—white, ivory, black, red, sun-tan.
Mottled and two-toned: peach, green, pearl, orchid, blue.
Accessories are available in all standard colors.

METHOD OF APPLICATION

Cemented onto any fairly smooth and even, old or new, painted or unpainted wall and ceiling surface, using as an adhesive SANIMETAL Oil Cement, which is a putty-like mixture. Tile is embedded in the waterproof cement thereby preventing rust and corrosion.

SANIMETAL Oil Cement is supplied by SANIMETAL TILE CORPORATION in containers of 5, 10, 25, 50 and 100 lbs. One lb. of SANIMETAL Oil Cement is needed for every 2½ sq. ft. of tiling.

OUTSTANDING ADVANTAGES

(1) Exact resemblance to clay tile.
(2) Easily installed at small labor cost.
(3) In remodeling work, the wall need not be torn out, nor plumbing fixtures reset.
(4) On new work, economically erected walls or wallboards are suitable as background.
(5) Becomes permanent part of wall.
(6) Sanitary (no space behind it for insects to breed).
(7) Extremely durable—will not craze, crack or chip. Colors are permanent.
(8) Economical (cost of installation is approximately 60% less than cost of clay tiling. All colors the same price).

VARIETY OF USES

Being a metal product, Sanimetal Tile is not suitable for floors, but as a wall and ceiling surface it can be used advantageously wherever clay tile can be used. The installation will be very pleasing in appearance and the work firm and durable. Each tile is firmly cemented. Can be installed over any fairly smooth and even plaster, wallboard, cement wall, etc., and on glass as well.

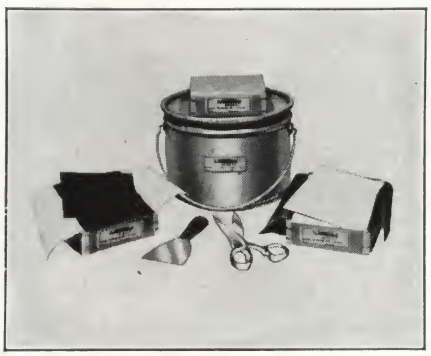
SHORT SPECIFICATION

The areas indicated on plans shall be finished with Sanimetal Tile (state size and color) as manufactured by the SANIMETAL TILE CORPORATION of 101 Park Ave., New York, N. Y.

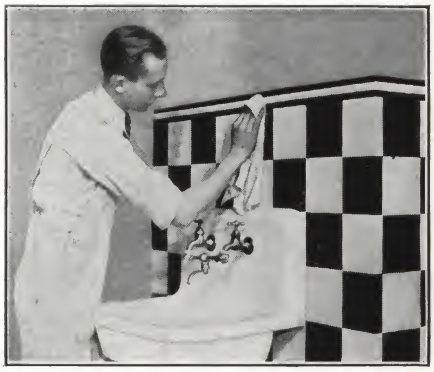
Surface Preparation—Surface to receive Sanimetal Tile should be dry, smooth and even. If not already painted, it should be sized with a cheap grade of shellac.

Application—Apply Sanimetal as per the directions of the SANIMETAL TILE CORPORATION, which directions become part of this specification.

Samples—*Samples and specifications for installing furnished on request.*



Materials and Tools Required
These comprise the tiles, oil, cement, a pair of scissors and wide putty knife. This illustration shows enough tiles and cement for a 105 sq. ft. installation



The Final Step
Removing the cement from the surface of the finished wall—done by simply wiping the surface with a dry cloth

KALMAN FLOOR COMPANY

INCORPORATED

NEW YORK OFFICE
110 East 42nd Street
ATLANTA

CHICAGO OFFICE
2013 Ferdinand Street
LOS ANGELES

THE KALMAN FLOOR—A GRANOLITHIC CEMENT FINISH FLOOR TOPPING

Laid by the Kalman Floor Company Using the Kalman Absorption Process

The Kalman Absorption Process

A practical method of installing, on a commercial basis, a theoretically correct, low water ratio concrete topping, producing a hard, wear-resisting floor, free from distintegration and dusting, and of maximum density, evenness of texture and unexcelled durability.

The Company

THE KALMAN FLOOR COMPANY has specialized and pioneered in cement finish floors for over fifteen years and maintains a nation-wide organization. Each job is installed by a crew of our own skilled workmen, under direct supervision of an experienced superintendent. Every phase of the work is handled by our own organization, including the preparation of the slab, the selection of materials, the complete floor installation, and the final curing.

Adaptability

Kalman Floors are the ultimate in cement floors for heavy duty service and are used in warehouses, power plants, railroad terminals and practically every kind of building for industrial purposes.

Kalman Floors have been installed in an exceptionally wide range of institutional buildings, including insane asylums, jails, police stations, hospitals, also schools, universities, stores, commercial and other types of buildings where a highly polished, sanitary floor of pleasing appearance is necessary.

Cross Section of Kalman Floor Topping, Showing Uniform Distribution of Aggregate and Density

Decorative Floors—Bases, Dadoes, Etc.

Kalman Floors can be laid in any standard cement color and, because of the water control feature of the Kalman Process, a rich, deep and uniform coloring is obtained.

Sanitary bases, curbs, stairs and dadoes are formed with the floor and can be installed in colors to match, or in contrasting colors.

Kalman Methods Insure Positive Results

Adhesion to Sub-base—A cement finish will adhere to a concrete surface only when that surface is free from laitance and otherwise clean and roughened. Our own skilled workmen prepare the concrete slabs the same day they are poured.

Materials and Mixing—The materials used in the cement finish, together with the care taken in mixing, are important in determining the lasting quality of the floor.

Aggregates used in Kalman Floors are subjected to an analysis in our laboratory. Cleanliness, hardness and size must be consistently uniform and in accord with exacting standards. By granulometric and colorometric tests we make sure that the materials forming our finish are adequate and dependable.

Where floors are to be subjected to excessively heavy traffic, we recommend the fortification of such floors by the use of harder and tougher grades of stone aggregates, which will be transported from other points if not available locally.

Control of Water Content—The ultimate strength of portland cement concrete is largely influenced by the proportion of water present during the setting of the cement. Positive control of water content is an all-important requirement of dependable cement floors. It is a well established fact that the least quantity of water required to produce reasonably workable concrete is well in excess of the quantity most favorable from the standpoint of ultimate strength.

By the Kalman Adsorption Process, a definite controlled removal of excess water is achieved so that twenty minutes after the floor topping is placed it is sufficiently dry and so firm that it will support a man's weight without foot impression.

Ideal Concrete Conditions Obtained—This *water absorption control* procedure is one of the outstanding features in the laying of Kalman Floors, and it is of the utmost importance for three separate and very significant reasons:

First: Sufficient water has been used in the mix to start full hydration of every particle of cement, also assure a dense mix and thorough coating of the aggregates with the cement. During the *absorption process* the topping is further densified and preshrunk.

Second: The water content is reduced to that desirable minimum under which condition the cement will set most favorably and develop its maximum strength, producing a concrete of highest possible compression value.

Third: The surfacing operations —compacting and troweling—when delayed until excess water has been disposed of by evaporation, are inevitably damaging to the delicate crystalline formations created by the setting of the cement.

By controlled removal of free water, the Kalman finish is brought to a proper condition of stiffness, within 10 to 30 minutes after spreading, thus permitting the full completion of the surfacing process in advance of the critical stage in the setting of the cement so as to remove all danger of loss of surface quality through disturbances of the crystallizing process.

The above factors assure a toughness and resistance to disintegration far above that developed in a concrete allowed to set in the ordinary way.

Compacting and Troweling—Surface smoothness in cement finish offers permanent resistance to wear only when the body of the finish beneath the surface is uniformly dense and free from voids.

Our finish is compacted by means of heavy, electrically operated disc floats. This mechanical compacting, combined with the inherent advantages of the Kalman Absorption Process and the final surfacing, by hand trowels, produces a smooth, hard, impervious surface of uniformly fine texture without tool markings or blemishes.

Experience and Organization

A factor of great importance involved in the installation of cement floors is the skill and knowledge of the men doing the work. Materials and methods require successful application.

The Kalman national reputation for positive results has been established by a skilled and experienced organization which has been built up over a period of a great many years.

The KALMAN FLOOR COMPANY is maintaining year after year a complete organization, including a field force of superintendents, foremen, mechanics and workmen, thoroughly trained and experienced in the laying of Kalman cement floors.

Guarantee

The Kalman Floor, produced in keeping with the foregoing principles, is a realization of the ultimate in quality, durability and appearance inherent in cement finish. It is a wearing surface of maximum toughness, minimum porosity and superior performance under the most severe conditions.

Kalman Floors are fully guaranteed in every respect.

INSTALLING A KALMAN FLOOR

No. 1 No. 2 No. 3

No. 4 No. 5 No. 6

No. 7

No. 1: Pouring concrete topping
No. 2: Screeding off
No. 3: Covering wet concrete topping
No. 4: Placing sand-cement drying mixture on top of burlap
No. 5: Removing drying mixture
No. 6: Machine compacting
No. 7: Hand floating and steel troweling

SPECIFICATIONS FOR KALMAN PROCESS CEMENT FINISH FLOORS

Scope—All concrete floor surfaces indicated on the plans, or herein specified to be cement finish, shall be finished by the Kalman Process. This work shall be done by the KALMAN FLOOR COMPANY, 110 East 42nd Street, New York, N. Y., or nearest District Office, who will furnish all necessary materials, equipment and labor for full and complete performance of the work in accordance with the following specifications.

General—The floor surfaces to be finished shall be turned over to the KALMAN FLOOR COMPANY by the general contractor, broom-cleaned, free from all oil, paint, grease, plaster, mortar or other foreign material, and shall be clear of all stored material, equipment, or other obstructions. The surfaces shall be reasonably true and uniformly even to a level approximately ¾ in. below the required finished floor level.

During the laying of floor finish by the KALMAN FLOOR COMPANY all openings in exterior walls adjoining the area being finished shall be closed and kept closed, and when heat is necessary to keep the interior temperature well above the freezing point, such heat shall be provided by the general contractor without cost to the KALMAN FLOOR COMPANY.

Preparation of Concrete Surfaces—Whenever possible within 24 hours after concrete has been poured, the KALMAN FLOOR COMPANY shall remove laitance and scum from the surface to be finished, leaving the surface clean and rough to insure uniform and sufficient bond when finish is applied.

When surfaces to be finished are inaccessible prior to final set of concrete, laitance and scum shall be removed by the KALMAN FLOOR COMPANY by mechanical chipping and scouring of the surfaces.

Materials and Mixing—Materials for cement finish shall consist of:

Portland cement, complying with the standard Specification for Portland Cement as last adopted by the American Society for Testing Materials.

Fine aggregate, consisting of clean sand or screenings from hard crushed stone or gravel, free from injurious quantities of clay, loam or vegetable matter, using only such portions as will pass a No. 4 sieve.

Coarse aggregate, consisting of clean, hard gravel, or crushed stone, free from injurious quantities of clay, loam, or vegetable matter, ranging in size from ¼ to ½ in.

The mix for finish shall be one part portland cement, one part fine aggregate, and one and three-quarter parts coarse aggregate, mixed with sufficient water to produce a workable flowing mixture.

Laying of Finish—Screeds to true level of finished floor surface shall be set by the KALMAN FLOOR COMPANY to established grade.

The concrete surface shall be wet at the time finish is laid.

Immediately before laying finish, the concrete surface shall be treated with neat cement grout, applied in a thin coat thoroughly brushed and worked into the surface.

Control of Water Content—As soon as the finish has been spread and rodded to true level, the excess water shall be withdrawn by the KALMAN ABSORPTION PROCESS. When all free water has been absorbed the dryer shall be removed and returned to the mixer to be incorporated in further finish.

Compacting and Troweling—Immediately after removal of dryer the exposed finish shall be thoroughly compacted, using motor driven floats of disc type.

This compacting shall be followed by troweling operations as required to bring the finish to a smooth, hard impervious surface, free from marks and blemishes.

Curing—Twenty-four hours after final troweling, the finished surface shall be thoroughly saturated with water and kept in saturated condition from 7 to 14 days thereafter.

Use of Floor—For at least five days following completion of troweling, use of the floor shall not be permitted, and thereafter only light use shall be permitted for an additional five-day period.

A PARTIAL LIST OF NATIONALLY KNOWN USERS OF KALMAN FLOORS

For Whom Two to Over Fifty Repeat Installations Have Been Made

American Woolen Company
Chrysler Motors Corporation
Commonwealth Edison Co.
Continental Baking Company
DuPont de Nemours Company
Firestone Tire & Rubber Co.
First National Stores
General Motors Corporation
General Foods Corporation
Great Atlantic & Pacific Tea Co.
Illinois Steel Company
Lever Bros. Company
Libbey-Owens-Ford Glass Co.
Montgomery Ward & Company
North American Rayon Corp.
Quaker Oats Company
Sears Roebuck & Company
Westinghouse Electric & Manufacturing Co.
Western Electric Company
Atchison, Topeka & Santa Fe Railway Co. Coast Lines
Baltimore & Ohio Railroad Co.
Chesapeake & Ohio Raiload Co.
Chicago, Burlington & Quincy R. R. Co.
Pennsylvania Railroad Co.
Union Pacific Railroad Co.
City of Boston, Mass.
City of Buffalo, N. Y.
City of Cambridge, Mass.
City of Providence, R. I.
Commonwealth of Massachusetts
Harvard University
State of Connecticut
State of Maryland
State of New York
University of Illinois
United States Government

THE MAXIMENT COMPANY

Manufacturers of Maximent—a Heavy Duty Cement Flooring Material—Plain or Colored, Sunproof and Limeproof

Sixth and Carr Streets, CINCINNATI, OHIO

REPRESENTATIVES

BALTIMORE, MD., Edward Rasch, 1102 No. Charles Street
CLEVELAND, OHIO, The Gellin Co., 2021 Euclid Avenue
DALLAS, TEX., Hartman Co., Construction Bldg.
DETROIT, MICH., W. D. Johnson, 14532 Charlevoix Avenue
LOUISVILLE, KY., Maintenance Supply Co., 700 Vine Street
MINNEAPOLIS, MINN., Industrial Flooring Service, 214 Fifth Avenue, No.
SAN FRANCISCO, CALIF., Steelform Contracting Co., 666 Harrison Street
WASHINGTON, D. C., L. K. McDorman, 510 Metropolitan Bank Bldg.

MAXIMENT
"FLOORS POURED FROM A SACK"
REG. U. S. PAT. OFF.

MAXIMENT is complete cement floor finish material, furnished in sacks, to which only water is added on the job. *Any cement finisher can apply it.* It is used as a separate topping to be applied over the rough concrete slab or as monolithic finish directly onto freshly poured concrete. In either method of application it may be troweled to a glass hard, smooth finish that is dustless and practically impervious to the absorption of fluids.

Old, worn cement floors invariably disclose hard spots which are still good. Had the entire floor been laid with only the "hard spots" it would still be good.

MAXIMENT is produced in the laboratory with utmost precision, hence it is all equal to the best of the "hard spots." Extreme uniformity is obtained with MAXIMENT. Tests over a period of years show a uniformity in MAXIMENT of less than 8% variation from the mean average of 6700 lbs. per sq. in. at 28 days, A. S. T. M. method of test for compressive strength. MAXIMENT is furnished plain or in colors in 100-lb. sacks.

Since MAXIMENT is made with laboratory precision an exact amount of water is added on the job in order to give a nicely plastic, uniform mix which is applied as separate topping. The MAXIMENT may also be spread dry directly onto the freshly poured concrete slab or ordinary cement topping, extracting the water by absorption. Three types: Separate Topping or Heavy Duty, Monolithic and Standard MAXIMENT.

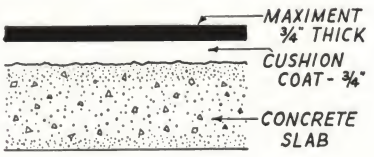
INSTRUCTIONS FOR INSTALLING MAXIMENT FLOORS

The numbers following type of floor indicate the order of operations for:		
Type of Floor	Order of Operations	Coverage per Sack
Separate Topping or Heavy Duty	1, 3, 4, 5, 6, 8, 10, 11, 12	Plain or Colored *Maximent,* 10 sq. ft., 1 in. thick
Monolithic	2, 9, 10, 11, 12	Plain *Maximent,* 80 sq. ft. Colored *Maximent,* 50 sq. ft.
Standard *Maximent*	1, 3, 4, 5, 7, 9, 10, 11, 12	Plain *Maximent,* 80 to 150 sq. ft. on 1-in. ordinary cement topping Colored *Maximent,* 50 to 80 sq. ft. on 1-in. ordinary cement topping

Slab Elevations

(1) Slabs marked "for finish", shall be brought 1½ in. below finish floor elevation. This allowance is made for the thickness of the finish.

Separate Topping



(2) Slabs marked "for finish", shall be brought up to finish elevation established by screed strips placed not more than 16 ft. apart so that non-sagging straightedge may grade the fresh concrete to the required elevation. Screed strips must be readily removable when grading is complete. After the concrete is screeded to the correct finished floor elevation, surplus water may be removed by dragging a hose across the surface after which the surface is smoothed with a darby.

Preparation of Slab

(3) It is important that the slab shall be properly prepared. The slab shall be cleaned of all laitance or scum in order to get a chemical bond. Fresh cement or concrete will not bond to previously set concrete, but will bond to clean stone or sand, therefore clean aggregate should be exposed. This is properly done by removing the laitance, with a fine toothed rake or wire brush, after the initial set but prior to the final set. The set of the slab must be sufficiently advanced so that there is no creamy mush, but rather crumbly, when it is brushed. This is to avoid the chance of recombining. If the slab is not properly prepared, and a scum of cement forms and hardens, every inch of the surface must be chipped to insure a bond. *The same holds true on old slabs to be resurfaced.* Mortar droppings or foreign matter will have to be chipped and removed.

Drenching the Slab

(4) The slab should be thoroughly cleaned with plenty of water with pressure and brooms the afternoon or evening before the topping is to be placed. This is necessary in order that the water may penetrate the slab during the night. The screed strips should be set after the drenching. They are of cold rolled steel, ⅜ x 1½ in. placed 8 to 12 ft. apart in parallel rows. Using a surveyor's level the strips may be brought to the proper elevation with two wedges, one on top of the other. Patties of moulding plaster of paris may then be set under the strips to hold them in place.

Grouting

(5) In the morning the slab is again drenched and followed by a creamy grouting of 1 part portland cement to 1 part fine clean sand which is well brushed into the surface. Do not grout too far ahead as it must be fresh when the topping is applied.

Passenger Depot, Cincinnati Union Terminal
COL. HENRY M. WAITE, Chief Engineer
ALFRED FELLHEIMER & STEWARD WAGNER, Architects
JAMES STEWART & CO., INC., General Contractors

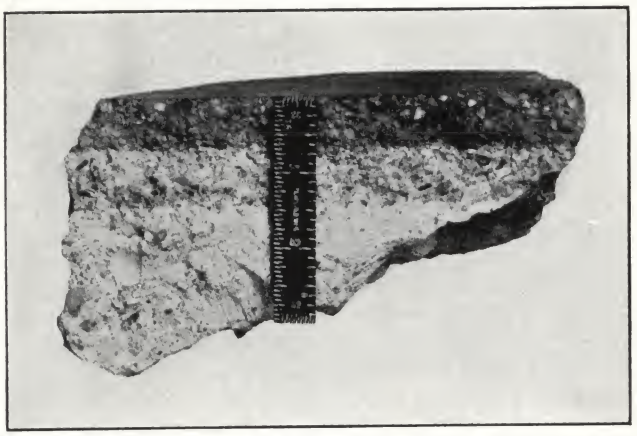
Cushion Coat

(6) A cushion or leveling coat of 1 part portland cement and 4 parts of clean coarse concrete sand is mixed with a small amount of water to a very stiff plastic mix and placed on the slab. It is leveled to ¾ in. below the finish elevation.

The purpose of the cushion coat is to level the slab so that the extremely hard MAXIMENT may be of uniform section. It also serves as a differential between the coefficient of expansion of the slab and that of the MAXIMENT the strength being about midway between the two.

Finish Coat

(7) The topping is a mix of 1 part portland cement to 3½ parts of coarse concrete sand. It is well mixed together with enough water to be nicely plastic. It is then placed on the grouted floor and brought to the level of the secured screed strips set at finish floor elevation. It is then screeded with long straightedge. Surplus water may be removed by dragging a hose across the surface. Then the surface is smoothed with a darby.



Actual sample of 1½-in. MAXIMENT *Heavy Duty Floor taken from a job because of alterations.*

Note there is no line of cleavage between concrete slab and cushion coat nor between cushion coat and the ¾-in. MAXIMENT *topping.*

Topping

(8) When a few batches have thus been placed and while still fresh it is covered with ¾ in. of MAXIMENT.

The MAXIMENT is mixed with the exact amount of water called for on the label of the sack and nothing else is added. When thoroughly mixed to the proper plasticity it will appear too wet, but it will not dump without the assistance of a shovel. It is then carefully screeded off to the finish elevation and the screed strips removed, the space being filled with fresh MAXIMENT.

Spreading Dry Maximent

(9) Two or three sacks of MAXIMENT are then dumped into a wheelbarrow. With a sweeping motion of shovel close to the floor spread, dry MAXIMENT evenly over wet surface of the level screeded slab. When the dry MAXIMENT shows that it is drying the concrete, it is evened with a drag. Use a drag made like a rake without teeth. Then check floor for level with straightedge, high spots being struck off with sawing motion.

Actual sample of Monolithic Floor Finish taken from a job because of extensive addition and the cutting of the old slab to make an opening for a large vat.

Note density of Monolithic MAXIMENT *Finish.* The very *dark surface of old floor was due to constant presence of aniline dye, yet in no place was there the slightest trace of any penetration through the surface.*

Every effort is made to screed off the fresh concrete, get the dry MAXIMENT spread on and closed up with the steel troweling. If the slab is on cinder subgrade or the weather is hot no time may be lost, hence men unfamiliar with the process should not attempt too large an area. One good finisher, for each 500 sq. ft. is advisable.

If it is found that the slab still shows free water on top after the dry MAXIMENT has been spread, wait until the water has left and apply a little more dry MAXIMENT. This is very important. Unless some fresh MAXIMENT is applied, a deposit of laitance is left. This will trowel nicely and give a good appearance but it will not stand wear for it represents all the dust and impurities that have been filtered out like scum. Fresh, dry MAXIMENT cuts this scum and replaces it with correct material.

Floating

(10) It is immediately floated with a wood float. The wood floating is immediately followed with the first steel troweling if smooth surface is desired. If the slab is on cinder subgrade or the weather is hot no time may be lost, hence men unfamiliar with the process should not attempt too large an area. One good finisher for each 500 sq. ft. is advisable.

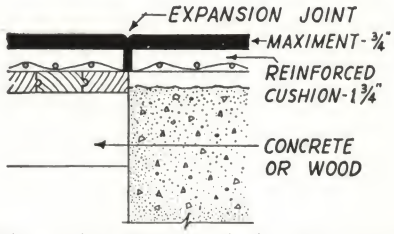
Troweling

(11) After obtaining initial set floor shall again be troweled with steel trowel. If smooth hard surface is wanted trowel again with a steel trowel after floor has lost its wet appearance.

Curing

(12) When floor has become so hard as not to be scratched or marred it should be covered with heavy Kraft paper and kept wet for at least 6 days. A longer period is better. Water is essential to carry on the hydration of the cement. The floor may be put to light use while curing but planks should be spread for heavy use.

RESURFACING OLD CEMENT OR WOOD FLOORS



Note: Where the old floor is in poor condition, it is advisable to either remove it entirely and replace as a new job following the specification for "Monolithic Finish," or apply a 3-in. reinforced free floating slab on top of it, if the old floor will stand the additional weight and elevation, and surface with MAXIMENT Monolithic Finish.

Floating Slab

Wherever the new floor is to adjoint present elevations, cut ramps in the old floor commencing about 6 ft. back and sloping to a depth of 2½ in. at the junction point. Place ½ x 3-in. expansion joint strips along all walls and around all columns or projections, and preferably on all column centers to permit movement in the new slab which in no way must bond to the old floor surface. Then spread 4 x 4-in. x No. 14 welded wire mesh, and proceed by the specification for "Separate Topping" or by "Monolithic Finish."

Bonded Floor Topping

Where the present concrete slab is in good condition but the surface is badly worn, remove the top surface a depth of 1 in. by careful chipping. Then soak with water overnight and thoroughly broom clean. Apply creamy grouting and 1 in. of MAXIMENT toping or MAXIMENT hardened surface on ordinary cement topping as selected from the foregoing specifications.

We apply MAXIMENT *Floors east of the Mississippi River, where the area will amount to about 50,000 sq. ft. or more.*

COLORED MAXIMENT

Colors—May be had as shown on color chart available on request. Colored MAXIMENT eliminates the difficulties encountered in the mixing of colors with regular mixes. Colored MAXIMENT is the same as plain MAXIMENT, except that a coloring material is added to the dry mixture at our plant. The result is a perfect uniformity of color which is sunproof, limeproof, and permanent.

Maximent Paste Color—For colored cement floors, mortar joints, precast products, stucco finish or stucco wash, plastered walls, and for coloring concrete. Sunproof and limeproof.

For full strength, use 1 gal. per sack of cement. For lighter shades, use fractional strength. One gallon to a cubic yard of concrete will give warmth and tone to the otherwise raw and lifeless appearance of exposed concrete surfaces. Maximent Paste Color comes in 1-gal. cans, with full directions.

HOW TO INSTALL AND POLISH COLORED MAXIMENT

All that has been said for plain MAXIMENT applies equally to colored MAXIMENT. Best results are obtained by following method of applying *Heavy Duty* floors. It is the only method where dividing strips can be used. The monolithic and the separate topping methods are the same for the colored.

Polish—Interior hard, smooth troweled colored floors are usually waxed with MAXIMENT Pigmented Polish where full depth of color is wanted at once. The polish removes a slight efflorescence or bloom which sometimes occurs in curing.

After the colored MAXIMENT floor is cured it is cleaned and permitted to dry thoroughly. The polish is applied sparingly with clean cloth. When it has penetrated sufficiently it is rubbed with clean cloths or polishing machine. Polish is designated by same numbers as floor material.

Furnished in 1-gal. cans, coverage 1000 sq. ft.

B-T LIQUID ACCELERATOR

B-T Liquid Accelerator has 3 distinct uses:

(1) Accelerates setting of Concrete.
(2) An Integral Waterproofer.
(3) An Antifreeze.

These qualities, numerated above, have been proven during 17 years' experience with hundreds of concrete jobs throughout the country. It also raises the temperature and improves the workability of a given mix, the concrete obtaining a higher early strength.

B-T Liquid Accelerator saves more than it costs. It enables work to be done many days when otherwise impossible, thereby effecting saving in overhead and overtime. Actual examples can be cited where concrete has been used for heavy traffic in five to six hours after placing in freezing weather.

For Quick Set—The following table shows the amount of B-T Liquid necessary to obtain usable concrete in a given number of hours. Where strength is wanted in less than 24 hours no less than 6 sacks of cement should be used, per cubic yard of concrete.

For a sack of MAXIMENT *use one-third of the quantities shown in the following tables:*

PINTS B.T. LIQUID PER SACK CEMENT FOR QUICK SET

Temp. F.	5 hrs.	12 hrs.	24 hrs.	72 hrs.
70°	10 pts.	8 pts.	6 pts.	4 pts.
50°	11 pts.	9 pts.	7 pts.	4 pts.
30°	12 pts.	10 pts.	8 pts.	4 pts.
*10°	12 pts.	11 pts.	10 pts.	8 pts.

*Heat aggregates and water at 10° F. or below. Protect work as much as possible.

For Integral Waterproofing—Where used only for waterproofing, use 1 pt. per sack of cement above 70° F. and 2 pts. for temperatures above 40° F. For below 40° F. govern by the following table for antifreeze.

PINTS B.T. LIQUID PER SACK CEMENT FOR ANTIFREEZE

40°-32° F. use 2 pts.	24°-20° F. use 4 pts.
32°-28° F. use 2½ pts.	20°-16° F. use 6 pts.
28°-24° F. use 3 pts.	16°-12° F. use 8 pts.*

*Heat aggregates and water. Take every precaution against freezing first 24 hrs.

ARCHITECT'S DESCRIPTION OF MAXIMENT MATERIAL

(Without Using Trade Name)

*When the architect desires to insert a description of MAXIMENT in specifications, rather than use the trade name, the following should be inserted wherever the word MAXIMENT occurs.

The mix for the cement floor finish shall be delivered in the original containers bearing the brand and label of the manufacturer. The mix shall consist of one part portland cement and sufficient aggregate to produce a nicely plastic mix with a water-cement ratio of 0.567. The aggregate shall be clean and free from dust or silt, and the particles shall be hard, durable, and nearly round in shape, and shall be absolutely impervious to the absorption of moisture. These particles shall be so graded that the above plastic mix will be preserved with the same water-cement ratio for the various proportions by weight of aggregate passing the following mesh to one sack of cement:

⅜ in. mesh..... 4 parts aggregate
No. 4 mesh..... 3 parts aggregate
No. 8 mesh..... 2 parts aggregate
No. 14 mesh.....1½ parts aggregate

Where colored floors are specified, the color pigment shall be thoroughly mixed and incorporated in the aforesaid dry mix by the manufacturer. The pigment shall be mineral oxides that are lime-proof and sun-fast and shall not affect the water-ratio as called for in the plain mix. After interior colored floors have been cured and are dry, they shall be waxed with a suitable polish containing the same pigment that has been used to color the cement on which it is to be applied.

SPECIFICATION FOR MAXIMENT MONOLITHIC FINISH

Floor finish shall be of (state whether plain or colored) MAXIMENT as manufactured by THE MAXIMENT COMPANY, Sixth and Carr Streets, Cincinnati, Ohio, and applied in strict accordance with the manufacturer's specifications, as follows (or, applied by the manufacturer): Except where noted to the contrary, concrete slabs marked for "finish" shall be brought up to finish elevation established by screed strips securely placed not more than 16 ft. apart, all by the concrete contractor.

Immediately after screeding, by the cement floor contractor, dry MAXIMENT shall be spread over the area in a uniform manner with sweeping motion of shovel held as low to slab as is practical. This dry spread shall remain untouched until it has absorbed to uniformly damp appearance. It shall then be rodded with short straightedge and then floated with wood float or electric floating machine. Additional dry material shall be added to low or wet spots.

The floating shall be followed with 2 or 3 steel trowelings and cured for 6 days by an approved method. One sack of plain MAXIMENT will cover 80 sq. ft. and one sack of colored MAXIMENT will cover 50 sq. ft. by this method.

CAUTION

MAXIMENT is an approved hardener in itself. Other integral hardeners are not necessary, nor are they advocated. Regardless of what material is used, it must be considered as an aggregate and the water-cement ratio law applied in every case. Hence, the addition of any other hardener which is mixed with cement on the job, defeats the very purpose for which it is intended and makes for hard and soft spots which MAXIMENT goes to such pains to avoid.

SPECIFICATION FOR HEAVY DUTY MAXIMENT FLOOR

Maximent Topping 1½ In. Thick (Bonded to Slab)—Floor finish shall be of MAXIMENT as manufactured by THE MAXIMENT COMPANY, Sixth and Carr Streets, Cincinnati, Ohio, and applied in strict accordance with the manufacturer's specifications, as follows (or, applied by the manufacturer): Except where noted to the contrary, concrete slabs marked for "finish" shall be brought to 1½ in. below the finish floor elevation. Prior to setting, the surface of the concrete shall be raked and broomed with wire brush to remove all laitance. At any time thereafter the topping may be applied by first drenching the slab over night and cleaning with brooms.

In the morning a creamy grouting of 1 part portland cement to 1 part fine sand shall be scrubbed into the slab and immediately followed with a stiff mortar of 1 part portland cement to 4 parts coarse concrete sand which is brought to a level ¾ in. below the finish elevation. While still fresh, this leveling coat shall be covered with MAXIMENT topping, mixed with the amount of water called for on the label on the sack. As soon as the MAXIMENT topping is leveled off to finish elevation, it shall be floated with wood floats or electric floating machine. The floating shall be followed with steel trowel (if smooth surface is desired). After obtaining initial set, the floor shall again be troweled with steel trowel. If smooth, hard finish is wanted, the floor shall again be troweled with steel trowel, after it has lost the wet appearance.

As soon as the floor has obtained its final set and is sufficiently hard not to be harmed thereby, it shall be kept wet for six days by an approved method of curing.

One sack of MAXIMENT, plain or colored, will cover 10 square feet 1 in. thick.

SPECIFICATION FOR STANDARD MAXIMENT FLOORS

Floor Finish shall be of MAXIMENT as manufactured by THE MAXIMENT COMPANY, Sixth and Carr Streets, Cincinnati, Ohio, and applied in strict accordance with the manufacturer's specifications, as follows (or applied by the manufacturer):

Except where noted to the contrary, concrete slabs marked for "finish" shall be brought to the proper level below the finish elevation to permit the cement topping to be sloped to drains with a thickness of not less than ¾ in. at any point. Prior to the setting, the slab shall be properly roughened or later chipped to assure a bond with the toppling. At any time thereafter the topping may be applied by first drenching the slab over night and thoroughly cleaning with brooms and water with good pressure.

In the morning a creamy grouting of 1 part portland cement to 1 part fine sand shall be scrubbed into the freshly wetted slab and immediately followed with the cement topping.

The cement topping shall be a mix of 1 part portland cement to 1 part coarse concrete sand and 1¾ parts pea gravel from ¼ to ½ in. in size. This shall be thoroughly mixed with sufficient water to produce a nicely plastic mix. This mix shall be placed on the grouted slab and struck off to the level of secure screed strips placed at not more than 12 ft. apart at the finish floor elevation.

Immediately after screeding, dry MAXIMENT shall be spread over the area in a uniform manner with sweeping motion of shovel held as low to the slab as is practical. This dry spread shall remain untouched until it has absorbed water to uniformly damp appearance. It shall then be rodded with short straightedge and floated and compacted with wood float, or electric floating machine, additional MAXIMENT being added to low or wet spots. The floating shall be followed with two or three steel trowelings to obtain the desired finish, free from skip marks or blemishes.

When sufficiently hard not to be harmed thereby, cure for 6 days in an approved manner.

By this method, one sack of plain MAXIMENT will cover 80 sq. ft. of ¾ in. ordinary cement floor topping: and one sack of colored MAXIMENT, 50 sq. ft. of ¾ in. topping.

This Method is authorized in the addendum to the floor specification of the Treasury Department, Procurement Division, Public Works Branch.

VEN-ITE COMPANY INCORPORATED

250 South Broad Street, PHILADELPHIA, PA.

BRANCH OFFICES

VEN-ITE—A GUARANTEED GRANOLITHIC CEMENT FINISH FLOOR TOPPING

Laid by Ven-ite Company Incorporated

Ven-ite Low Water Ratio Process

VEN-ITE COMPANY INCORPORATED, has developed a processed floor topping, using the Ven-ite low water ratio process, which will measure up to any pre-determined result. Each installation is made by our skilled and trained workmen under the direct supervision of an experienced inspector.

A positive process for pre-determined flexural and compressive strength, assuring the ultimate in a cement finish floor topping. Ven-ite Floors are strong, dense, dustless, water and acid resisting, practically abrasion-proof and greatly reduce maintenance costs.

The Ven-ite Organization and Experience

VEN-ITE COMPANY INCORPORATED maintains a nation-wide installation service, our specially trained men doing the entire job. Details of installation, proper preparation of the concrete slab, selection of materials, complete floor installation, final curing and protection of the finished floor, are carefully checked by Ven-ite inspectors to insure absolute uniformity. The large number of repeat installations for patron organizations attests to the wearability of our product.

Where Used

Ven-ite Floors meet all the exacting requirements for heavy duty industrial flooring. Successful installations have been made in almost every type of industrial and institutional buildings with extremely successful results. Ven-ite Floors have been installed in:

Airplane Assembly Plants
Asbestos Plants
Automobile Assembly Plants
Barracks Building
Ball Bearing Factories
Book Printing Plants
Breweries
Camera and Film Plants
Canneries
Chemical Plants
Churches
Chewing Gum Factories
Dairies
Distilleries
Dormitories
Explosive Powder Plants
Fire Department Bldgs.
Food Products Plants
Freight Terminals
Generating Plants
Hosiery Mills
Hospitals
Infirmaries
Institutional Bldgs.
Ice Cream Plants
Jails
Mental and Training Schools
Oil Packaging Plants
Paper Mfg. Plants
Plastics Mfg. Plants
Paint and Varnish Bldgs.
Printing Plants
Railroad Terminals
Rayon Plants
School Buildings
Soap Mfg. Plants
Theatres
Universities
Utility Power Plants
Warehouses

Application of a Ven-ite Floor in a Paper Manufacturing Company Warehouse
CLARENCE E. WUNDER, Architect
TURNER CONSTRUCTION CO., General Contractors
Our trained crews are your guarantee of a satisfactory job with no delays

Ven-ite Floors reduce maintenance costs; a factor of prime importance in any floor construction. Wherever a highly polished, non-dusting floor is desired Ven-ite is the ideal solution at a reasonable cost.

Ven-ite Colored Cement Floors

Ven-ite Floors are available in several colors to match or contrast with walls or trim. Our standard colors are V-1 Maroon, V-2 Buff, V-3 Green, V-4 Brown, V-5 Black, V-6 Gray, V-7 Natural, and as installed by the Ven-ite Company offer the finest decorative floor to date. Ven-ite colored borders, bases, stairs and wainscoting, can be had in contrasting color schemes.

Ven-ite Guarantee

Ven-ite Floors are guaranteed to bond. All floors installed by our trained men are unqualifiedly guaranteed to meet the most exacting requirements for floors under all service conditions as specified in the contract. Complete installation by our own men insures one responsibility, assures pre-determined results exactly as specified.

Ven-ite Process Controls Water Ratio—(Water Content)

A pre-determined proper concrete condition is obtained by the Ven-ite Process of Controlled Floors. The process permits immediate compaction and will support a man's weight without foot impression 30 minutes after floor topping is placed.

Control of water content—the top strength of portland cement concrete is pre-determined by the definite proportion of water content during hydration. Since 30% of 4-gal. water ratio per bag of cement enters into hydration and 70% evaporates, it is obvious that water control be kept to a minimum. The Ven-ite Process of densifying and compaction squeezes out excessive moisture and assures an even strength to the entire plane of the topping.

The Ven-ite finish is densified by special heavy electrically powered compacting machines, followed by our trained troweling crew producing a smooth, hard, level surface showing no tool ridges.

Ven-ite Methods Assure Pre-determined Results

Materials—The materials used in the Ven-ite Floor are first subjected to an analysis in our testing laboratory. Only cleaned, washed and dried aggregates are used after determining their hardness (H. A. Value) in strict accordance with our rigid standards.

Every shipment is given a granulometric and colorometric test to definitely pre-determine its fitness for the specific use to which the floor finish will be subjected.

Ven-ol—Final surface treatment, after curing, combines chemically with the free lime solubles of the cement matrix, further increasing the resistivity to atmospheric conditions.

Mixing—The mixing of the component parts of the Ven-ite mixture is carefully controlled by an inspector at all times.

Placing—The placing of the mixture is under constant supervision of a Ven-ite Inspector. This phase is important to secure the value of preliminary hydration.

SPECIFICATIONS FOR VEN-ITE PROCESS CEMENT FINISH FLOORS

Scope of the Work—All concrete floor surfaces where so indicated on plans, or listed elsewhere herein, specified to be "Ven-ite Floors" shall be ¾-in. Ven-ite Process Cement Floor Finish, installed by the VEN-ITE COMPANY INCORPORATED, 250 South Broad Street, Philadelphia, Pa., or nearest district office, which company shall furnish all necessary materials, equipment and labor in accordance with the following specifications. This company shall be notified in writing at least 10 days prior to the time for starting the installation of the finishing.

Preparation of the Concrete Floor Slab or Fill—During and not later than 12 hours after the pouring of the concrete floor slabs or fill, the VEN-ITE COMPANY INCORPORATED shall prepare the slabs or fill surfaces by the removal of all laitance or scum from the surface, leaving the surface clean, rough and in satisfactory condition to insure uniform and sufficient bond with the finish topping.

If conditions of the work make it impossible for the VEN-ITE COMPANY INCORPORATED to remove this scum and laitance as the work progresses, the laitance and scum shall be removed by mechanical chipping and scouring before the surface finish is installed.

General—The slab topping shall be installed only after the heavy construction work has been completed so as to avoid abuse or damage to the finished surface.

The slab or fill surfaces to be finished shall be turned over to the VEN-ITE COMPANY INCORPORATED broom clean, free from oil, paint, grease, plaster, mortar, clay, mud, or foreign materials, equipment or other obstructions. The surfaces shall be reasonably true and uniformly even to a level approximately ¾ in. below the finished floor level.

No work of laying the floor finish shall be started until all openings in exterior walls adjoining the area to be finished shall have been closed and provision shall have been made to keep them closed during the progress of the work.

Materials—Materials used in the cement finish shall conform to the following requirements:

Portland Cement: shall meet the "Standard Specifications for Portland Cement" (Serial Designation C9-30) of the American Society for Testing Materials and subsequent revisions thereof.

Fine Aggregate: shall consist of clean, hard sand or screenings from hard crushed stone or gravel free from dust, clay loam or vegetable matter in injurious quantities. Only such aggregate shall be used as passes a No. 4 sieve.

Coarse Aggregate: shall consist of clean, hard gravel or crushed stone free from dust, clay, loam or vegetable matter in injurious quantities and from any coatings which might weaken the bond. Aggregate shall range in size from ⅛ to ½ in.

Water: shall be clean, free from oil, acids or injurious matter.

Mixing—Finish mix shall consist of 1 part portland cement, 1 part fine aggregate and 1¾ parts coarse aggregate, mixed with sufficient water to produce a workable plastic mixture.

Installation—The VEN-ITE COMPANY INCORPORATED shall set screeds to the true level of the finished floor to establish grade.

Just prior to placing the finish topping the surface of the slab or fill shall be thoroughly wet and all pools of water brushed off. Immediately before placing the wearing course a thin grout of neat cement shall be thoroughly brushed on the slab.

Floor Finish—Shall be approximately ¾ in. thick. Special care shall be taken to obtain the correct water content of not more than 5 gal. of water to each sack of cement. After the concrete topping is placed and screeded, the excess water shall be removed from the topping by the Ven-ite dewatering process. The topping shall be of such consistency that, 30 minutes after the mixture is screeded, it will sustain the weight of 300 lbs. on an area of 1 sq. ft. of topping without making any impression on its surface. Topping shall be compacted thoroughly, using motor-driven compacting machines or rollers weighing, approximately, 200 lbs. and not over 24 in. in length. If larger rollers are used, they shall be proportionally heavier. This compacting shall be followed by hand troweling operations as required to obtain a smooth, hard impervious surface free from marks and blemishes. No additional water shall be applied to the topping by sprinkling or otherwise during the finishing or troweling operations. The floor finish shall be given not less than three trowelings to secure the results stated herein before. The final troweling shall be burnishing, and as it progresses the surface shall show a shine or gloss.

Before the final troweling, sufficient time shall have elapsed so that the cement paste does not adhere to the edge of the trowel. The trowel shall be held at an angle of approximately 30 degrees to the surface. The operation of final troweling shall produce an audible ringing sound from the trowel.

Curing—Twenty-four hours after the final operations, the finished surface shall be thoroughly cured from 7 to 14 days and covered during this period with Kraft paper, two-ply, asphalt membrane, reinforced with cross fibers, or other suitable curing process.

For at least 5 days following completion of troweling, use of the floor will not be permitted, and thereafter only light use shall be permitted for an additional 10-day period.

Treatent—After curing, when the floor is dry, the floor shall be treated with Ven-ol.

Treads, Risers, Landings—*(Note to Architect):* Treads, if to have this mixture (to be reinforced with wire lath as shown on the drawings, for Pan Type Treads).

Coved Base—Cove base shall be formed when called for and finished as above. Metal ground bead when required, to be furnished and set by the plaster contractor.

Colored Ven-ite Floors—Where colored Ven-ite Floors are shown on the plans or called for in the specifications, the above specifications shall be followed and in addition:

At the proper time, Ven-ite mineral oxide color pigment will be incorporated in the topping to produce the required color finish as per sample submitted and on file.

Experience—It is the true intent that this type of floor is to be of the highest class workmanship.

No work below this standard will be accepted.

Note: The following to be supplied by the General Contractor at no cost to VEN-ITE COMPANY INCORPORATED.

Heat (to keep the interior temperature above 45 degrees F.); a suitable water supply, under pressure to a point within 150 ft. of our work area; and electric current for light and power of at least 10 hp., 220-volt, 60-cycle a.c. single phase; and maintenance for same (with suitable outlets for power and light bulbs in rooms where work is in progress; Hoist and Hoisting Engineer). These are to be installed and ready for use one full day before our work begins.

Consult Us on Specifications for Honed Finished Applied Floors—Terrazzo Type and Ven-ite Heavy Duty Ven-Steel Process Cement Floors

MEMORANDA

WASHINGTON CONCRETE CORPORATION

Contractors for Duromit Floors, the Hardest Known Cement Surface

Empire State Building, NEW YORK, N. Y.

Representing

American Fleurisit Co., Inc.

635 Rockdale Avenue
CINCINNATI, OHIO

MIAMI, FLA.

Duromit—The Aggregate

Duromit aggregate is a mixture of extremely hard, sharp mineral granules. Ground and graded so that the largest particles will pass through a 1/12-in. mesh screen. Duromit is harder than any other material that can be mixed with cement. It is entirely free from dust and other impurities. Chemically, 92% of it is not dissolvable in acid. The ingredients are all of practically the same specific gravity, thus eliminating irregularity in the mixture. Packed in 100-lb. burlap bags, ready for use.

DUROMIT

Proved by Time

Duromit Floors have been in use in the United States for several years, and in England and Continental Europe for over 20 years. *They are a fully perfected system of floor construction.*

Installation by Specialists

The WASHINGTON CONCRETE CORPORATION are specialists in the application of Duromit Floors. They will contract for applying these floors anywhere, provided the installation is large enough to warrant sending a supervisor.

DUROMIT FLOORS—THE SURFACE FIVE TIMES HARDER THAN CONCRETE

Duromit Floors are produced by combining portland cement with Duromit aggregate, to form a remarkably strong wearing surface. Can be applied over a concrete slab or other suitable foundation. Completely free from the usual defects of ordinary floors. They do not crack nor craze under heavy traffic; they do not disintegrate nor dust. *No upkeep cost whatsoever.*

A mixture of Duromit and cement will give an approximate:

Compressive Strength	*Tensile Strength*
9,620 lbs. in 3 days	675 lbs. in 3 days
11,200 lbs. in 7 days	792 lbs. in 7 days
14,920 lbs. in 28 days	1,050 lbs. in 28 days

Advantages

Among the many advantages possessed by Duromit Floors are the following: Resistance to abrasion; non-dusting and non-checking; resistance to water, oils and alkalis; compressive strength of 14,500 lbs. per sq. in. and tensile strength in excess of 1,000 lbs. per sq. in.; sanitary; the first cost is the only cost. No maintenance cost whatsoever. Finish may be natural gray or colored. Surface may be left with smooth troweled finish or machine rubbed to give the appearance of terrazzo.

Special Uses

In Breweries—Resist action of grain acids, brine, heavy trucking, dropping, loading and rolling of barrels.

In Dairies, Bakeries, Ice Cream Plants—Withstand action of lactic, fruit and other acids, brine, steaming, heavy trucking and impact loads. Can be readily cleaned.

In Chemical Plants—Resist disintegrating action of acids and alkalis which destroy ordinary concrete.

In Machine Shops, Manufacturing Plants and Industrial Buildings—Resist heavy trucking, impact loads, etc.

In Packing Houses—Resist constant chemical action of fat and blood. Easily kept in a sanitary condition.

For Loading Platforms—Resist heavy trucking and dropping of heavy loads.

For Stair Treads, Ramps, Etc.—Provide a non-slip surface for heavy pedestrian traffic in public places.

Installations Speak for Themselves

Upon request we will be glad to send a list of installations of Duromit Floors in your vicinity. Inspection will convince you of their superior quality and durability.

Specifications

Floors in ..... shall be Duromit Floors, laid and guaranteed by the WASHINGTON CONCRETE CORPORATION, Empire State Building New York, N. Y., strictly in accordance with their standard practice and with the following specifications:

Finish Aggregate—Shall be Duromit, as supplied by the WASHINGTON CONCRETE CORPORATION, and delivered to the job in the original containers.

Cement—Shall be high, early strength cement.

Preparation of Foundation—Whether of new or old concrete, brick or wood, the foundation shall be of good quality and structurally adequate to receive the Duromit Floor. Concrete surfaces shall be made rough to insure a good key between the foundation and mortar cushion on which the Duromit is applied. Slab shall be cleaned of all loose and foreign matter and shall then be kept wet with water to the point of saturation for at least 12 hours. The surface shall then be grouted with a thin coat of 1:1 sand and cement, mixed with water to the consistency of heavy paint.

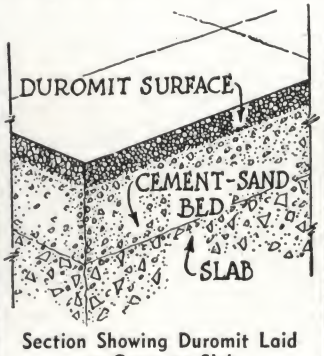
Laying of Mortar Cushion—Immediately after the application of the grout, a ¾-in. mortar bed shall be applied, composed of a 1:3 mixture of cement and sand, with not more than 3½ gals. of water per bag of cement. This shall be thoroughly tamped and screeded to the proper level, in areas of 20 to 25 sq. yds.

Application of Duromit Top Coat—Immediately following the laying of the mortar cushion, the Duromit Top Coat shall be applied, which shall be composed of Duromit aggregate and [high, early strength cement] in equal parts, thoroughly mixed with not more than 3½ gals. of water per bag of cement. This Duromit finish shall be not less than ¼ in. thick. It shall be troweled not less than 3 times to a hard, smooth finish. Dusting with cement or sprinkling with water after floor has been laid shall not be permitted.

Note: If colored or rubbed finish is desired in any portion of the floors, this fact should be noted.

Terrazzo Effect—Should a terrazzo effect be desired, one troweling shall be omitted, and the surface shall be ground and polished with an approved grinding machine as soon as possible after the floor has set.

Wetting—After floor has sufficiently set, it shall be covered with burlap or approved paper and be kept damp for approximately 7 days.



Section Showing Duromit Laid on Concrete Slab

AMERICAN TERRAZZO STRIP CO.

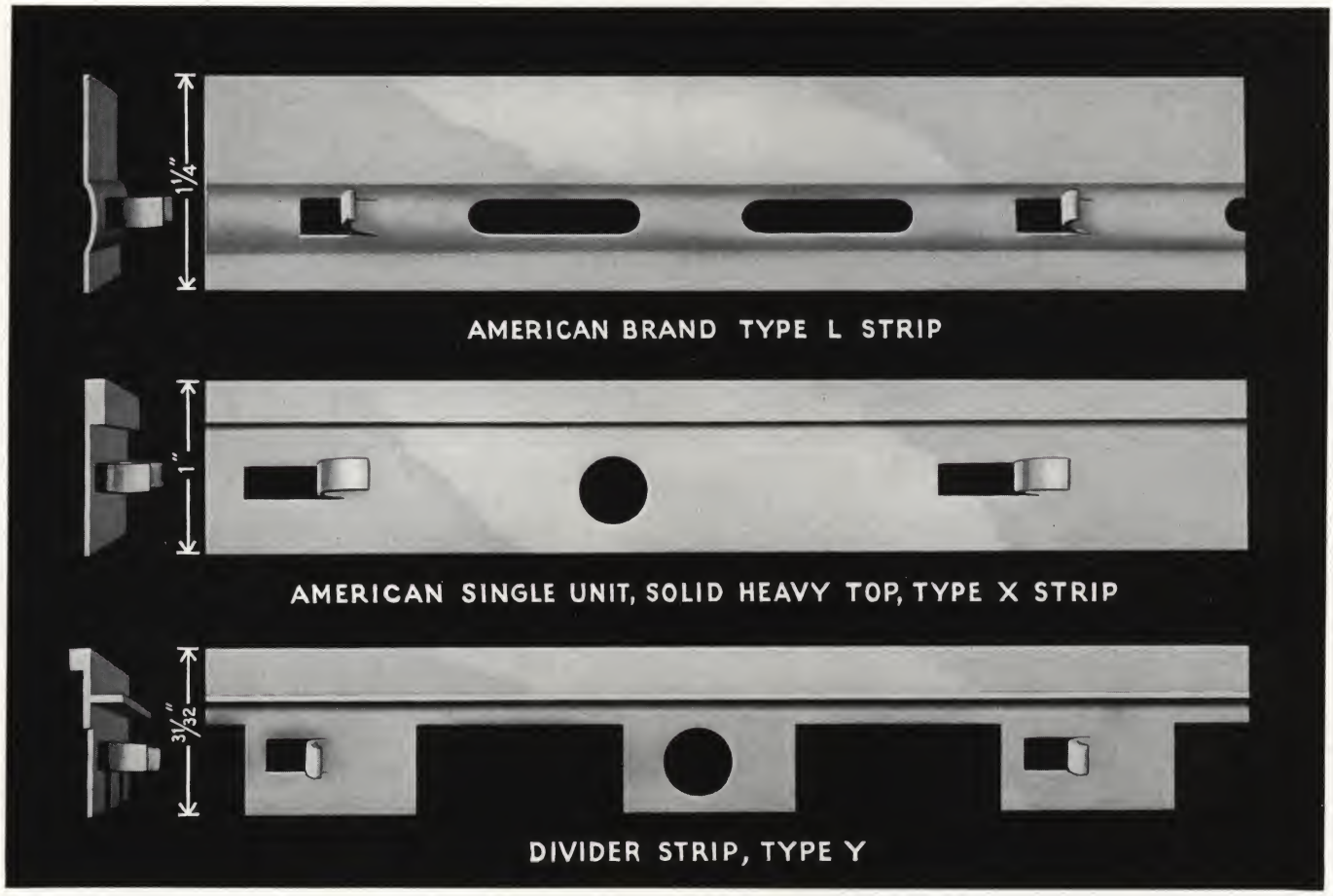
Manufacturer of Terrazzo Strips and Aligners

College and Highland Avenues

NIAGARA FALLS, N. Y.

WAREHOUSES AND DISTRIBUTORS IN PRINCIPAL CITIES

AMERICAN TERRAZZO STRIPS



American Brand Type L Strip

The patented curl shape projection punched from the body of the strip provides the best possible anchorage both horizontally and vertically. The exclusive stiffening bead, running the whole length of the strip, imparts to it enormous rigidity and tensile strength, yet leaves it sufficiently pliable horizontally for any type of design work. The beading operation, carried out by a 75-ton, 6-ft. hydraulic press, successfully eliminates all waves and other irregularities caused by punching the strip. In view of this beading operation, we absolutely guarantee these strips to be perfectly flat and straight. Made in all gauges in brass, white alloy zinc, and nickel silver.

American Single Unit, Solid Heavy Top, Type X Strip

Extruded out of a solid section of metal. The usual type of heavy top strip is fabricated by attaching a thin flat strip to a relatively thicker top section or bar. Due to the single unit feature of the "American" heavy top, there is no possibility of the top bar becoming separated from the base strip due to faulty attachment or corrosion, whilst in the floor. There are no separated ends where the strip is cut. The thickness of the base portion of the "American" single unit strip is approximately 17 B. & S. gauge brass and 16 B. & S. gauge white metal, in contrast to the 20 B. & S. gauge strip used in the ordinary two-piece heavy top.

Divider Strip, Type Y

With ⅛-in., $\frac{3}{16}$-in. and ¼-in. recess for linoleum, asphalt tile, and rubber. Provides a perfect joint between the terrazzo border and the linoleum, asphalt tile, or rubber. Scientifically designed for ease in setting in the floor. Like the "Amercian" single unit heavy top, this recess divider is extruded out of a solid piece of material. Whilst the single unit heavy top and linoleum divider costs us appreciably more than the ordinary type of heavy top and linoleum strip, they are marketed at approximately the same price, so that in specifying "American" the architect, owner, and contractor are assured of a superior quality product at no additional cost.

AMERICAN ALIGNING OR LOCKING DEVICE FOR TERRAZZO DIVIDING STRIPS, OR OTHER FLOORING STRIPS

Patent Applied For

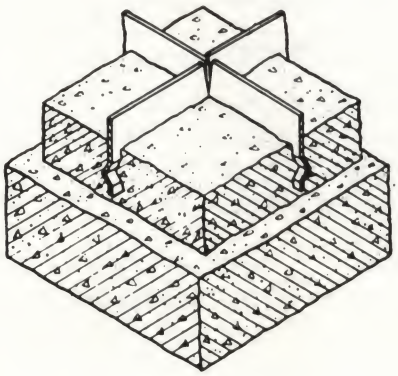


FIG. 2

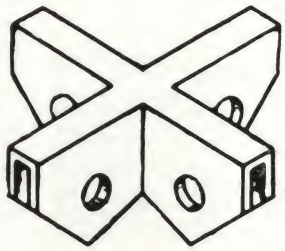


FIG. 1
ALIGNING DEVICE
FULL SIZE

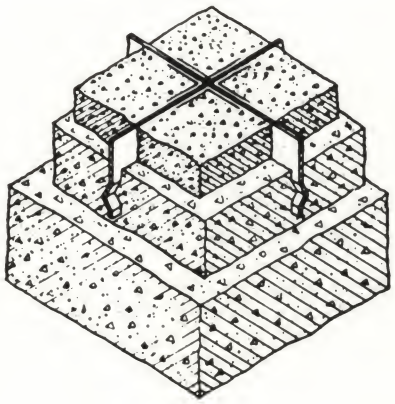


FIG. 4

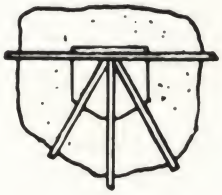


FIG. 5

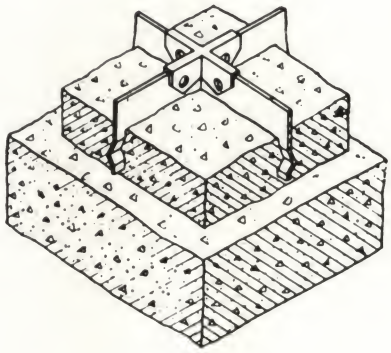


FIG. 3

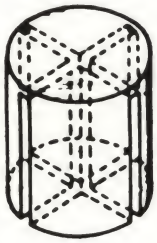


FIG. 10

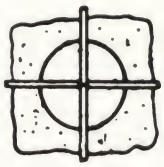


FIG. 6

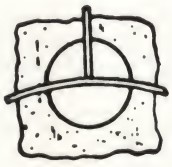


FIG. 7

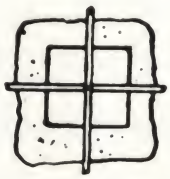


FIG. 8

FIG. 9

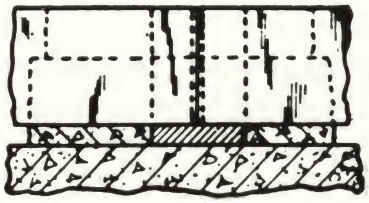


FIG. 11

Importance of Aligning Terrazzo Dividing Strips

There is nothing more annoying to the architect who has spent hours in designing a floor than to find that the strips which form the design have been moved out of place and the continuity of his design is spoiled in the installing. Previously, in order to overcome the objection of this moving of the strips after being set in the design, architects have specified that the strips be soldered, or otherwise fastened together. This procedure involves considerable time, labor and expense, and for these reasons is undesirable.

Advantages of the American Aligning Device from the Standpoint of Design

The American Aligning or Locking Device is a brass channel so arranged that it aligns the ends of the strips where they intersect, without the necessity of soldering or otherwise fastening the ends of the strips together.

It also holds them rigidly in place during the pouring of the finish coat.

It adds to the decorative quality of the strips after the floor has been poured, if applied over the strips.

Method of Application

The American Aligning or Locking Device consists of a two or more way channel section which fits down over or under the dividing strips at the point of each intersection. It is not fastened to the strips but the channel section prevents movement of the strips.

If the aligning device is used above the top of the strips, they will project slightly above the finished floor, and be ground down to the level of the top of the dividing strips when the grinding machines finish the top surface of the floor. Even when the top of the aligning device has thus been ground off, the grooves or channels still continue to give the effect of holding the strips rigidly in place.

The method of application and finished results are shown in the accompanying sketches, Figs. 1, 2, 3 and 4. The variety of connections which the aligning device will accommodate are shown in Figs. 5, 6, 7, 8 and 9. It is not necessary to have the intersections set at right angles in order to use the strip. The modified member illustrated in Fig. 6 is shown in more detail in Fig. 10. The locking member may also be used in an inverted position, in which case the member would be applied to the strips before the base is poured. Fig. 11 shows the open ends of grooves thus located at upper edge of the strips.

LOCKSTRIP MANUFACTURING CORPORATION

T. M. C. Lockstrips for Terrazzo, Composition, Linoleum and Cement Floors

36-09 Vernon Boulevard, LONG ISLAND CITY, N. Y.

Products

T. M. C. LOCKSTRIP (patented METAL DIVIDING STRIPS) for terrazzo, marble, composition, linoleum and cement floors, base and wainscots and plaster base grounds. Manufactured in brass, nickel silver and zinc.

TRADE-MARK

Distribution

Any contractor can obtain T. M. C. LOCKSTRIPS direct from our factory or through any of the 19 warehouses of the Chase Brass & Copper Co., Incorporated, located throughout the country.

T. M. C. LOCKSTRIP was introduced to the Terrazzo trade in 1921 and was immediately adopted by the trade because of its value as an expansion strip, and was quickly recognized as a means by which the installation of beautiful terrazzo work in various designs was greatly simplified. T. M. C. LOCKSTRIP functions just as effectively in composition, cement and other plastic floors as it does in terrazzo.

WHY LEADING ARCHITECTS SPECIFY T. M. C. LOCKSTRIPS

(1) T. M. C. Lockstrips Prevent Cracks

The slotted openings or locks in T. M. C. Terrazzo Floor Strips form an intentional weak spot in the underbed. If cracks occur through expansion or contraction, they will localize at these weak spots and not travel to the surface of the floor.

(2) They Insure Uniform Thickness of Aggregate

The "wings" on T. M. C. LOCKSTRIPS provide an accurate measuring gage for a uniform thickness of aggregate. With T. M. C. LOCKSTRIPS, architects can be assured of getting exactly ½, ⅝ or ¾ in. of surface coating as called for in their specifications. With these T. M. C. "wings", you have positive optical proof that the strip has not been pushed down too deep into the underbed, with proportionately less aggregate in the top coat. An aggregate that is too thin cannot be rolled or compressed to a proper density. Consequently it will not wear satisfactorily and will have a greater tendency to crack.

(3) They Cannot Be Pushed Out of Position

T. M. C. patented "wings" also provide a sure means of setting strips straight horizontally and true vertically. The long slot holes and the half round openings under the "wings", provide the means for a perfect bond between the strip and the cement underbed. The strip cannot be pushed out of line in rolling the terrazzo aggregate, nor can they be further depressed if, in spots, the underbed should happen to be of poor mixture.

(4) They Are Free From Waves Or Curvature

Superior quality of metal, and specially designed presses for punching out the slots and wings, make T. M. C. LOCKSTRIP perfectly straight and free from waves or curvature.

(5) Protected By Patents

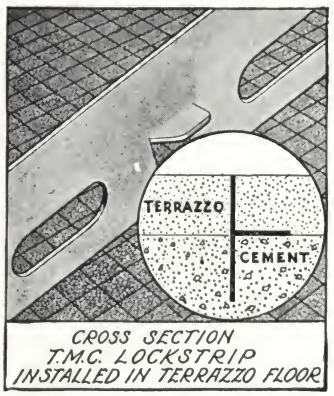
T. M. C. LOCKSTRIPS are fully protected by letters patent issued by the U. S. Patent Office, which have been repeatedly upheld by court decisions.

(6) Guaranteed

The LOCKSTRIP MANUFACTURING CORPORATION stands squarely back of every foot of T. M. C. LOCKSTRIP. Look for the trade-mark.

FOR TERRAZZO FLOORS

Standard Lengths—6 feet

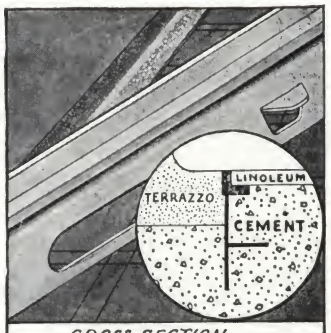


CROSS SECTION
T.M.C. LOCKSTRIP
INSTALLED IN TERRAZZO FLOOR

Type No. 10—1 in. wide 20 B.&S. gage	Type No. 18—1 in. wide 14 B.&S. gage
Type No. 11—1¼ in. wide 20 B.&S. gage	Type No. 19—1 in. wide 12 B.&S. gage
Type No. 12—1 in. wide 18 B.&S. gage	Type No. 19-A—1⅛ in. wide 12 B.&S. gage
Type No. 13—1¼ in. wide 18 B.&S. gage	
Type No. 14—1¼ in. wide 16 B.&S. gage	Type No. 20—1¼ in. wide ⅛ in. top
Type No. 17—1 in. wide 16 B.&S. gage	Type No. 50—1¼ in. wide $\frac{3}{16}$ in. top
Type No. 15—1¼ in. wide 14 B.&S. gage	Type No. 21—1¼ in. wide ¼ in. top
Type No. 16—1¼ in. wide 12 B.&S. gage	Type No. 60—1¼ in. wide ⅜ in. top
Type No. 42—1¼ in. wide 9 B.&S. gage	Type No. 61—1¼ in. wide ½ in. top

FOR COMBINATION TERRAZZO AND LINOLEUM FLOORS

These strips are designed to be used between terrazzo and linoleum or tile floors, having an accurate shelf to fit linoleum or tile of various thicknesses. They are a necessary detail for the proper laying of linoleum or rubber tile to a terrazzo (or cement) border in hospitals, hotels, clubs, churches and office buildings. They establish a definite level for the cement underbed.



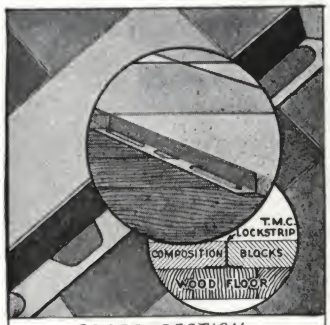
CROSS SECTION
T.M.C. HEAVY LINOLEUM CURB STRIP
WITH TERRAZZO BORDER

Standard lengths—6 feet

Type No. 52—⅛ in. top x 1¼ in. wide for $\frac{3}{16}$ in. linoleum
Type No. 52A—⅛ in. top x 1¼ in. wide for ¼ in. linoleum

ANGLE STRIPS

Angle Strips are used as dividers for composition and magnesite terrazzo floors. Also as dividers between the plaster wall and the terrazzo or cement base.



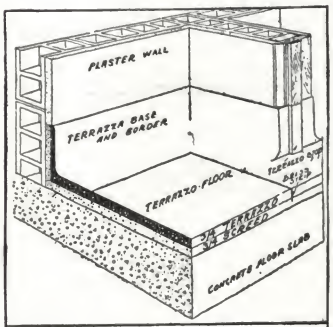
CROSS SECTION
T.M.C LOCKSTRIP
INSTALLED IN COMPOSITION FLOOR

Standard lengths—6 feet

Type No. 38—⅜ in. x ⅝in x 20 B.&S. gage
Type No. 39—⅜ in. x ⅝ in. x 18 B.&S. gage
Type No. 38-A—½ in. x ½ in. x 20 B.&S. gage
Type No. 39-A—½ in. x ½ in. x 18 B.&S. gage
Type No. 40—⅝ in. x ⅝ in. x 20 B.&S. gage
Type No. 41—⅝ in. x ⅝ in. x 18 B.&S. gage
Type No. 40-A—¾ in. x ½ in. x 20 B.&S. gage
Type No. 41-A—¾ in. x ½ in. x 18 B.&S. gage

COVE BASE DIVIDERS

Cove Base Dividers are made wide or narrow toe, whichever may be desired. Punched with patent T. M. C. flange to insure accurate finish. Furnished in all thicknesses from 20 B&S gage to ¼-in top.



TYPICAL TERRAZZO INSTALLATION IN NEW BUILDING

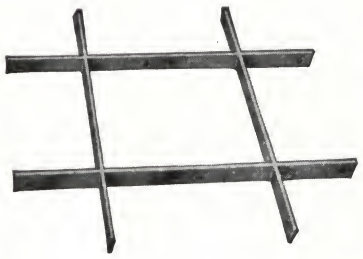
Standard Sizes

1 in. Radius—6 in. High—wide toe
1½ in. Radius—6 in High—wide toe
1 in. Radius—6 in. High—narrow toe
1½ in. Radius—6 in. High—narrow toe

SLOTTED GRILLES

For Hospital Operating Rooms

Slotted grilles should be installed in all hospital operating rooms to ground static electricity. Installed parallel to the walls and soldered at each intersection, they form a positive electrical connection.



These grilles are made of ¾-in. wide by ⅛-in. thick metal slotted and interlocked to form 6-in. squares. All strips are securely soldered together at each intersection.

SUGGESTED FORMS OF SPECIFICATION

For Terrazzo Floors

As indicated on plans or separately specified, all terrazzo work shall be divided into panels, borders and designs with T.M.C. Lockstrips as manufactured by the LOCKSTRIP MANUFACTURING CORPORATION. All strip shall be of Brass (or Nickel Silver or Zinc).....inches wide over all by.....inch (or gage) thick for.....inch thickness of terrazzo aggregate.

Linoleum and Rubber Tile Floors

In all places indicated on plans or specified, insert between cement or terrazzo borders and linoleum fields, T.M.C. Brass (or Nickel Silver or Zinc) Curb Dividing Strips.....inch thick at top for.....inch thick linoleum type No.....as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Operating Rooms and Slotted Grilles

All Divider Strips for metalized terrazzo floor shall be ¾ in. high by ⅛ in. thick as manufactured by LOCKSTRIP MANUFACTURING CORPORATION. They shall run parallel to walls and shall divide floors into 6-in. x 6-in. squares. All metal strips shall interlock and be securely soldered together at each intersection so as to form a positive electrical connection. In each room and corridor near the four corners and at centers provide an approved bare copper conductor wire of No. 6 B&S Gage or equivalent Copper Strip and securely solder same to Floor Divider Strip.

For Composition Floors

All composition floors shall be divided into panels of sizes indicated on plans or called for in specifications with T.M.C. Lockstrip Angles size.....inch by No.....B&S Gage Brass (or Nickel Silver or Zinc) as manufactured by the LOCKSTRIP MANUFACTURING CORPORATION.

Marble Tile Floors

All marble tile floors specified or indicated on plans shall have the joints formed with T.M.C. Lockstrip.....inch wide by No..... B&S Gage Brass (or Nickel Silver or Zinc) as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Sanitary Cove Base

Terrazzo Base shall be divided by T.M.C. Brass Cove Base Dividers.....inches high by.....inch radius by No.....B&S Gage as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Plastering

All Sanitary Bases when joined with flush finish plaster above shall be separated from the plaster by the use of T.M.C. Brass Angle Strip.....inch by.....inch by No.....B&S Gage as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

INSTALLATIONS

T.M.C. LOCKSTRIPS have been used in many of the most prominent buildings in the country. Below are listed a few representative installations:

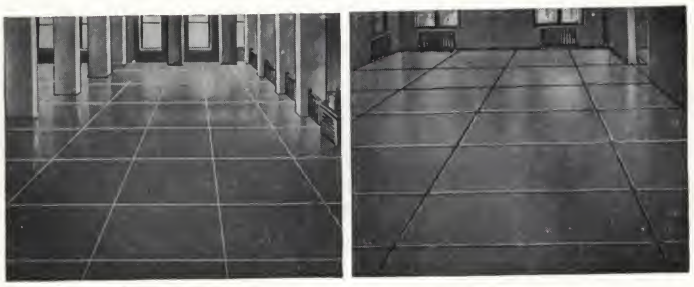
BUILDING	ARCHITECT
N. Y. Central Passenger Station Buffalo, N. Y.	Fellheimer & Wagner
Chrysler Building New York, N. Y.	William Van Alen
R. J. Reynolds Building Winston Salem, N. C.	Shreve & Lamb
Mellon National Bank Pittsburgh, Pa.	Trowbridge & Livingston
Merchandise Mart Chicago, Ill.	Graham, Anderson, Probst & White
Meadowbrook Hospital Meadowbrook, N. Y.	John Russell Pope
Bellevue Hospital New York, N. Y.	Charles B. Meyers
Southern New England Telephone Co. New Haven, Conn.	R. W. Foote and Douglas Orr
Rockefeller Center New York. N. Y. (Various buildings)	Reinhard & Hofmeister Hood & Fouilhoux Corbett, Harrison, MacMurray
Marshall Field Building Chicago, Ill.	Graham, Anderson, Probst & White
60 Wall Tower New York, N. Y.	Clinton & Russell
R. H. Macy & Co. Store New York, N. Y.	Kohn & Butler
Union Railway Station Indianapolis, Ind.	McLenahan & Bencker
L. Bamberger & Co. Store Newark, N. J.	Jarvis Hunt
N. Y. Central Office Building New York, N. Y.	Warren & Wetmore
Suffolk County Courthouse Boston, Mass.	Desmond & Lord

T. M. C. LOCKSTRIP FOR MODERN CEMENT FINISH FLOORING AND WALKS

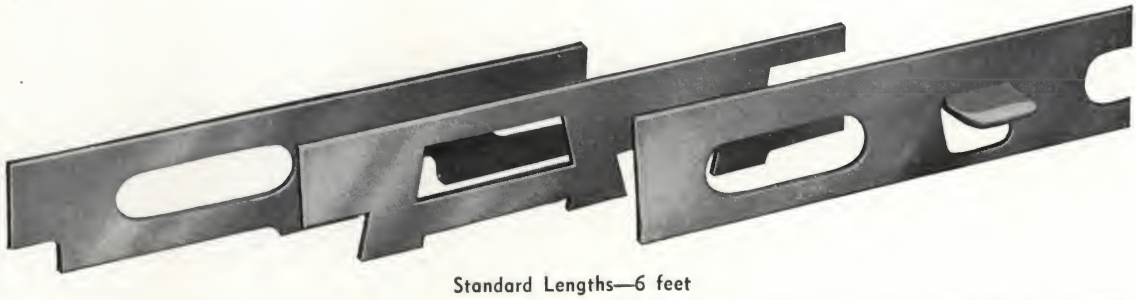
T. M. C. Lockstrips are recommended for cement floors and walks where uniform or alternating colors are desired. Cement floors installed with T.M.C. Lockstrips present a smooth sanitary finish without cracks or crevices and eliminate unsightly and unsanitary scoring joints. This type of floor, in uniform or alternating colors, is ideal for factories, industrial plants, railroad stations, warehouses, etc. Also for outside porches, dance floors and sidewalks.

Any contractor can obtain T.M.C. Lockstrips in Brass, Nickel Silver or Zinc direct from our factory or through any of the 19 warehouses of the Chase Brass & Copper Co., Incorporated.

With T. M. C. Lockstrip **Without T. M. C. Lockstrip**

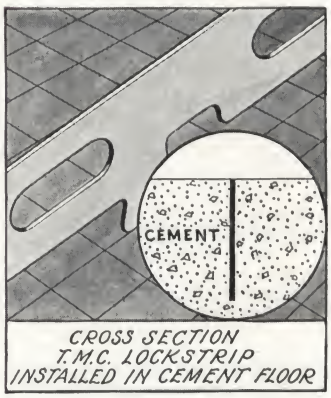


No Open Joints — Old Type Scored Joints



Standard Lengths—6 feet

	For One-Color Cement										For 2-Color Cement	
Type	29	30	43	46	44	47	45	48	31	32	28	27
Width	1″	1¼″	1″	1¼″	1″	1¼″	1″	1¼″	1¼″	1¼″	1¼″	1⅜″
B&S Gage No....	18	18	16	16	14	14	12	12	⅛″ top	¼″ top	18	18



CROSS SECTION T.M.C. LOCKSTRIP INSTALLED IN CEMENT FLOOR

Suggested Form of Specification

All floors shall be divided into panels of sizes indicated on plans or called for in specifications with T.M.C. Brass (or Nickel Silver or Zinc) Cement Strips,.....inches wide over all by No.....B&S Gage thick, Type No.....as manufactured by LOCKSTRIP MANUFACTURING CORPORATION.

Three Color Cement Floor—No Open Joints

Some Typical Installations

BUILDING	ARCHITECT
Amherst College Gymnasium, Amherst, Mass.	McKim, Mead & White
N. Y. Central Station, Buffalo, N. Y.	Fellheimer & Wagner
Bloomfield Trust Co. Office Bldg., Bloomfield, N. J.	Uffinger, Foster & Bookwalter
Genealogical & Biographical Society Bldg., New York, N. Y.	LaFarge, Warren & Clark
Aldelphi College, Garden City, L. I., N. Y.	McKim, Mead & White
Valley Stream High School, Valley Stream, N. Y.	Coffin & Coffin
Hicksville High School, Hicksville, N. Y.	Tooker & Marsh
Woolworth Store Sidewalk, Broadway and 43rd St., New York, N. Y.	A. F. Winters
Auditorium and Convention Hall, Atlantic City, N. J.	Lockwood, Greene & Co.
Roanoke Hotel, Roanoke, Va.	Geo. B. Post & Sons

MEMORANDA

CENTRAL COMMERCIAL CO.

SALES AGENTS AND DISTRIBUTORS

332 So. Michigan Avenue
CHICAGO, ILL.

12 East 41st Street
NEW YORK, N. Y.

"Vogeliner" Color Strip Dividers

"Vogeliner" Color Strip Dividers (patented and others pending) are made of tempered plastics for terrazzo, cement, composition, floors and walls. "Vogeliner" Color Strip is used as an edging against linoleum, carpet and mastic type floors. "Vogeliner" color base and plaster screed is used for finish at top of terrazzo and cement or composition base.

Ornamental design units are used as an integral or multiple divider and decoration in terrazzo work.

All strips are made in 5-ft. lengths of $\frac{3}{16}$ and $\frac{3}{8}$-in. face width. Made in *seven colors* similar to marble in color and wearing qualities.

Properties and Durability

Extensive laboratory tests and report of Robt. W. Hunt Testing Laboratory show abrasive wear to be of the same ratios as the marble generally used in terrazzo.

Actual use in public buildings and government buildings, where excessive wear occurs, shows that the "Vogeliner" Color Strip has even wearing qualities with the terrazzo and that it withstands all uses and abuses as does the terrazzo in which it is laid. "Vogeliner" looks and wears like marble, also resists static loads, and is a non-conductor of electricity. "Vogeliner" so used produces better terrazzo and in color designs for a durable and artistic floor.

Service

To assist the architect in selection of color and design pattern, Standard unit one-piece ornaments "A.B.C.D." 8-in. over all are now available. (See drawing on reverse side of this page.) Stock strips and ornamental inserts afford wide choice of patterns and color combinations. If special ornamental design insert unit or units are desired, quotations will be gladly given.

VOGELINER
COLOR STRIP
TRADE MARK
DIVIDERS FOR TERRAZZO OF
·TEMPERED PLASTICS·

Interlocking Feature

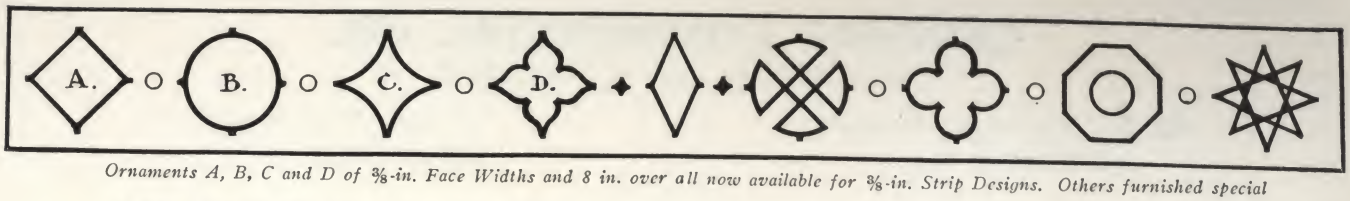
"Vogeliner" is designed to mechanically lock the strip, into the base screed and also the terrazzo top coat. The cross section of the strip provides continuous anchorage. The strip is integral or of one solid piece, with a maximum depth for wear. Therefore, no parts to loosen or lugs to interfere. Grinds and cuts like marble with no riveting effect, or ragged edges. "Vogeliner" divides the floor into interlocked, individual panel units, all of one continuous wearing extent.

Patterns, Design and Colors

"Vogeliner" Color Strip Divider for terrazzo affords the designer a new medium in floor work. By the use of Cream White, Black, Brown, Red, Green, Silver Gray and Yellow-Buff, singly or in combination, and by contrasting color inserts, the divider becomes a part of the design color scheme of the floor. Beautiful surfaces can be obtained by the use of one kind and color of marble with tinted white or white and natural cement background, using small panels of "Vogeliner" Color Strip Divider for either a contrasting or blending design effect. Curved designs can be obtained by using the stock "Vogeliner" color strip and stock unit inserts.

STRIPS ARE MADE IN 5-FT. LENGTHS OF $\frac{3}{16}$-IN. AND $\frac{3}{8}$-IN. FACE WIDTHS IN THE FOLLOWING COLORS:

SEE RECOMMENDED SPECIFICATION FORM FOR ARCHITECTS ON NEXT PAGE



Ornaments A, B, C and D of ⅜-in. Face Widths and 8 in. over all now available for ⅜-in. Strip Designs. Others furnished special

Color Base-screed and Linoleum Edging

"Vogeliner" Base-screed is a new, permanent color finish for the top of monolithic base work. Furnished in ⅜-in. and ⅛-in. face width and adaptable for "flush" or $\frac{1}{16}$-in. to ⅛-in. projection, it affords a practical, sanitary and decorative finish. The cost of decorating or painting is eliminated at this point and a clean and sanitary and non-corrosive finish is obtained. Where base and border are required, used with a resilient floor material, use "Vogeliner" color base-screed and stock "Vogeliner" color strip of ⅜-in. face as an edging against the resilient floor material.

Vogeliner Specification

(Insert in Terrazzo Section)

"Vogeliner" Color Strip Dividers for Terrazzo (or Cement Work)—Furnish and install into the screen-bed, while it is still in the semi-plastic state, "Vogeliner" Color Strip Divider of Tempered Plastics for the specified face widths as shown on the plans. In panels as shown using strips of one piece with inter-locking integral grooves. Follow all design layouts for color and widths of "Vogeliner," and color ornamental inserts. Where strip is used as edging against linoleum or other similar material, the terrazzo base and border is to be ground and finished before the cement bed for the linoleum is laid.

Use a steel bar of the thickness of the terrazzo top as a setting gauge when installing the "Vogeliner" Color Strip, using care to trowel screed material against the sides of strip to cover anchor shoulders of the strip. Place all strips, unit ornamental inserts accurately and in a neat manner. Installation to have neat joints and cuts and to be set level and all done in a workmanlike manner.

"Vogeliner" Color Base-Screed—(Insert in Terrazzo Section.) Furnish and install "Vogeliner" Color Base-Screed of Tempered Plastics of colors as indicated on plans or room schedule for bases of Terrazzo or Cement as scheduled. To be set at heights and flush or projecting, all, as indicated on plans, and to be set level and true with mitered inside corners and bent outside corners. Use due care and set level and true and neat, all in workmanlike manner.

Recommended Panel Sizes

We recommend panels of from 15 to 30 in. per side. Unsightly cracks are minimized by the use of the smaller individual (though interlocked) panel or block of terrazzo. Main lines of dividing strips should follow the lines of the structural steel or concrete to avoid cracks due to general shrinkage or settlement of building. However, do not sacrifice the design pattern but combine in layout if possible.

We *recommend* the use of the standard specifications of the National Terrazzo and Mosaic Association and to accentuate color contrasts, the use of chemically pure cement colors and white cement.

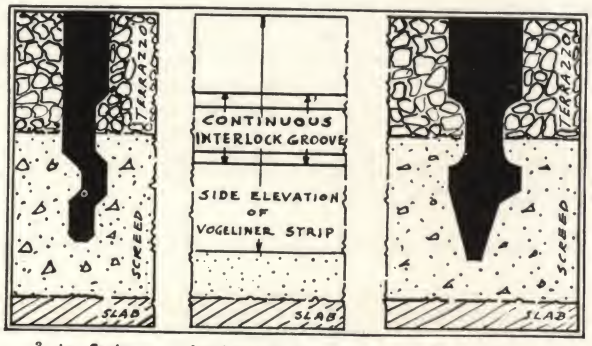
Economy of Installation of Integral Strip

"Vogeliner" is homogeneous and is of one piece of stock designed to give maximum depth of wear.

For installation, can be cut and mitered by hand with a steel hack-saw or by power with thin carborundum wheel. Strips can be formed by terrazzo contractor for any curve desired for the work. The sides of the strip are plumb with no projections and all joint cuts can be made tight. Ends of strip are beveled to facilitate tight end joints.

"Vogeliner" grinds like marble with color shades similar to marble.

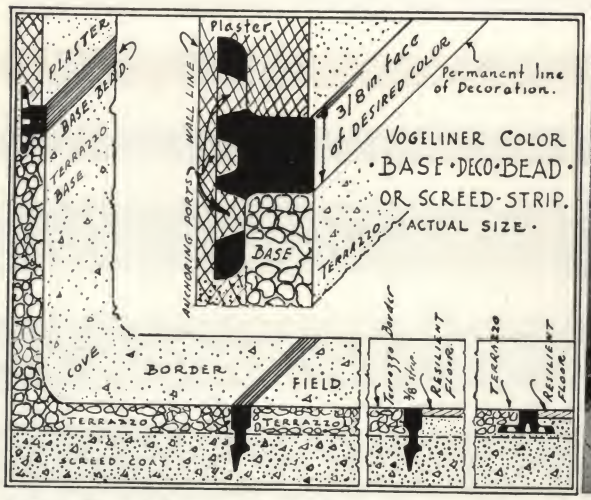
The final installed cost is very economical and the strip is easy to set and is self-aligning.



$\frac{3}{16}$-in. Strip Locking Grooves ⅜-in. Strip

Sizes and Prices

The $\frac{3}{16}$ and ⅜-in. face widths of dividers meet the demand for visibility and design of divider, and are reasonable in price. The architect can now use these widths and the seven colors desired at no extra ultimate cost to the owner.



Section Through Base and Border Showing "Vogeliner" Color Base Bead and Border Edging Strip

Lobby—Villa St. Felix, Plymouth, Mich.
O'Meara & Hills, Architects

Versatility in

TERRAZZO

with DIVIDING STRIPS

MANHATTAN TERRAZZO STRIPS

PERMIT UNLIMITED FLEXIBILITY IN EXPRESSION OF MODERN ARCHITECTURAL IDEAS

Terrazzo, a Venetian art, centuries old, has come to be one of the most beautiful of modern floor treatments. Terrazzo is unsurpassed as a medium for expression in design and color for use on floors, stairs, partitions, wainscot, ornamental murals and similar decorative units.

In this catalog we have included many unusual terrazzo installations as examples of the wide range of application of this versatile material.

A modern accessory and necessity in terrazzo work is the dividing strip. These strips tend to reduce the possibilities of cracking and when cracks do occur they are confined within the limits of the dividing strip making them less noticeable. The use of dividing strips permits the architect to create any design desired to blend with the entire decorative scheme.

MANHATTAN TERRAZZO STRIPS ARE PRODUCED IN A MODERN PLANT

Manhattan Dividing Strips for Terrazzo, Marble, Composition, Linoleum and Cement floors are manufactured in a modern plant equipped with the latest machinery. Our trained personnel represent the best in experienced workmen — our facilities enable us to handle any size order at short notice. The illustrations below show the various departments in our plant. Reading from left to right, *top row*: Stock Room, Office; *bottom row*, Heavy Top Dept., Press Dept., Base Bead Dept.

The Covers: We are indebted to the Universal Atlas Cement Company for the illustration on the front cover of this catalog, and to the Medusa Portland Cement Company for the back cover illustration, both of which illustrate unusual and distinctive terrazzo installations made possible by the use of white cement.

Terrazzo Floors in

STORES AND RESTAURANTS

The application of Terrazzo in stores and restaurants serves a two-fold purpose; attraction value and ease of maintenance. Terrazzo resists wear, pleases the eye, and its sparkling beauty creates a pleasing impression in the mind of the potential customer. The illustrations shown on this page suggest some unusual methods of employing terrazzo effectively and attractively. *Low first cost — low maintenance cost — years of service.*

Terrazzo Floors in

LOBBIES AND CORRIDORS

Terrazzo floors are extremely practical, less slippery than most floors, owing to the cement contained, and may be enriched with ornamental borders and motives of marble mosaic. Inserts of cast metal, flush or in relief add to the attraction value. The use of dividing strips in the floors shown on this page separate the different color areas and outline the various parts of the designs to advantage. Entrances and hallways leave distinct impressions — make them pleasing with terrazzo designs.

Terrazzo Floors in

MISCELLANEOUS PUBLIC SPACES

Areas subjected to severe wear — churches — sidewalks and similar public spaces are ideal locations for terrazzo work. Beauty, combined with low maintenance cost makes terrazzo the logical choice where attractiveness is an asset. The flexibility of terrazzo allows the architect great freedom in creating a design in keeping with surroundings. The illustrations shown on this page illustrate typical modern treatments employing terrazzo effectively.

TERRAZZO FOR

WAINSCOTING • PARTITIONS • STAIRS

The use of terrazzo for wainscoting and partitions presents an entirely new field for the architect. When used for these purposes, terrazzo is run plastic the same as plaster. This prevents any possibility of the walls working loose and gives an excellent appearing installation. Stair treads, a common usage, are usually precast and finished at the shop and set at the building in the same manner as marble. They may, however, be installed in mastic form on the job. The use of an aggregate in the making of stair treads makes them non-slip and wear resistant, enabling the architect to combine the beauty of terrazzo with the non-slip advantages of an abrasive stair tread.

Note: The example of terrazzo wainscot (shown at the right) is part of a permanent terrazzo display installed in the Procurement Division, Washington, D. C. by the National Terrazzo and Mosaic Association. This display is only one of many and represents the materials of no single manufacturer.

Photo at right: Copyrighted by Harris & Ewing.

TERRAZZO FOR SWIMMING POOLS

The use of terrazzo in designing decorative effects for swimming pools may be traced back to ancient Venetian times. Excavations in and around Venice in recent years have unearthed swimming pools employing intricate designs executed in terrazzo. The adaptation of terrazzo to modern swimming pools gives the architect free rein in creating a pool that will harmonize with any design motive employed elsewhere in the building, or he may deviate from other designs and perhaps employ a marine motive, with equal success. Whatever the design terrazzo assures faithful reproduction.

HOSPITAL GRILLES

Where terrazzo is used in surgical operating rooms, anaesthesia rooms or allied rooms and corridors, the floors should be divided by metal strips of fairly heavy thickness into small squares or tiles. All strips should be connected to make positive electrical contact at all intersections, and the entire system should be grounded to water pipe or some other suitable conductor. This will prevent any danger of electric spark due to potential difference igniting any gas which may be present around the patient who is under anaesthesia on the operating table.

Concerning this subject, the National Board of Fire Underwriters states and recommends as follows: "The most elusive form of ignition of an anaesthetizing gas or vapor is the static spark. To guard against this hazard, insulating material should be avoided and machines, tables, patients and operators bonded together and to the floor and the latter thoroughly grounded."

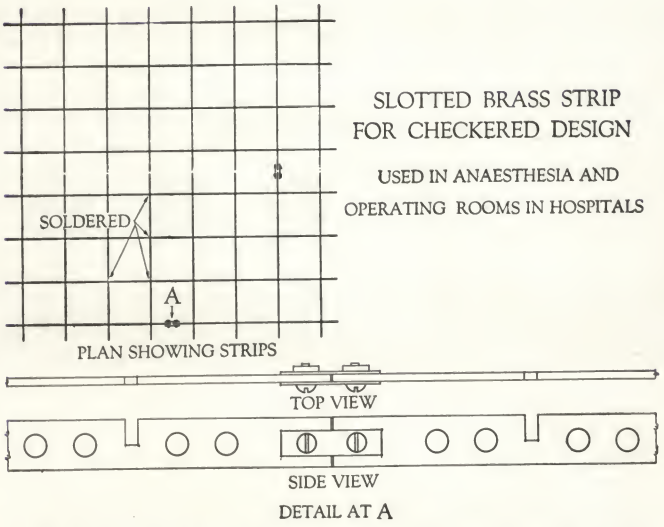
The Manhattan system of grounding for the elimination of static has been in use for many years in conjunction with terrazzo, tile and composition floors. Many hospitals over the entire country have included these grilles in their specifications, realizing their vital importance.

The grilles are available in 4, 5 and 6-in. squares for terrazzo and composition floors—6-in. squares are recommended for economy. For tile floors the squares are usually ½-in. larger than the individual tiles. Squares of the above size are small enough to assure contact with the foot of a small person.

Heavy metal is essential for a good contact. 1/16 to ⅛-in. brass or white alloy zinc has mainly been used. The depths are as follows: ¾, 1 or 1¼ in. for terrazzo; 1 or 1¼ in. for tile and ⅝ in. for composition floors (fitted for nailing to the floor). **For terrazzo, ¾ x ⅛-in. brass is recommended in 6-in. grilles.**

The strips are slotted and soldered so that they are united electrically. The grounding is completed by connecting the system in each room or corridor with a water or steam pipe. The grilles are shipped in sections approximately 36x36 ins. and are joined on the job by brass bars and bolts. The assembly and grounding of the units requires comparatively little labor, as each section is numbered and an assembly drawing is supplied to every job.

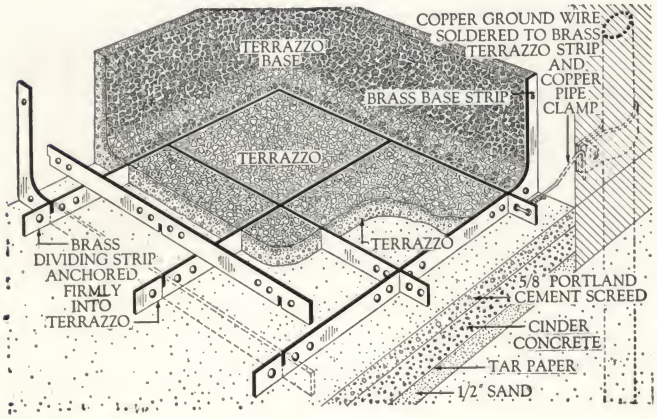
Operating Room with Manhattan Hospital Grilles in Floor, Doctors Hospital, New York, N. Y.



Method of Bolting Sections Together to Form One Unit

INSTALLATIONS

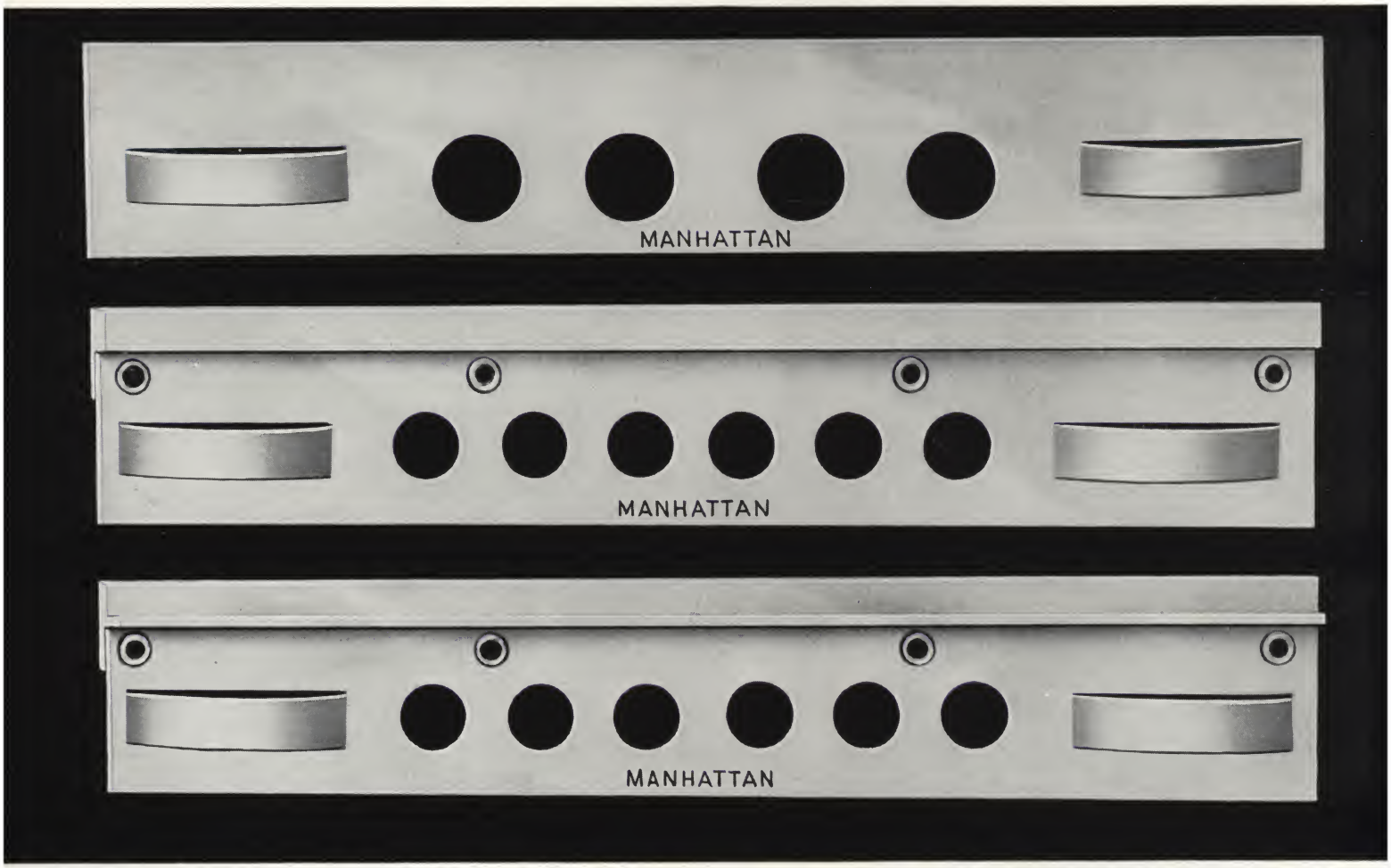
Brooklyn Hospital, Brooklyn, N. Y.
Big Sisters Hospital, Ventura, Calif.
Charlotte Hungerford Hospital, Torrington, Conn.
Doctors Hospital, New York, N. Y.
Delsin Sanitarium, Brooklyn, N. Y.
Easton Hospital, Easton, Pa.
Foote Memorial Hospital, Jackson, Mich.
Glen Lake Sanatorium, Glen Lake, Minn.
Holy Name of Jesus Hospital, Gadsden, Ala.
Hillman Hospital, Birmingham, Ala.
Harbor View Hospital, Seattle, Wash.
Hospital of State University of Iowa, Iowa City, Iowa
Kings County Hospital, Brooklyn, N. Y.
New Hospital of Penn Industrial Reformatory, Huntingdon, Pa.
U. S. Veterans' Hospital, Mt. Alto, Washington, D. C.
U. S. Veterans' National Home Hospital, Milwaukee, Wis.



Details Showing Application of Hospital Grilles

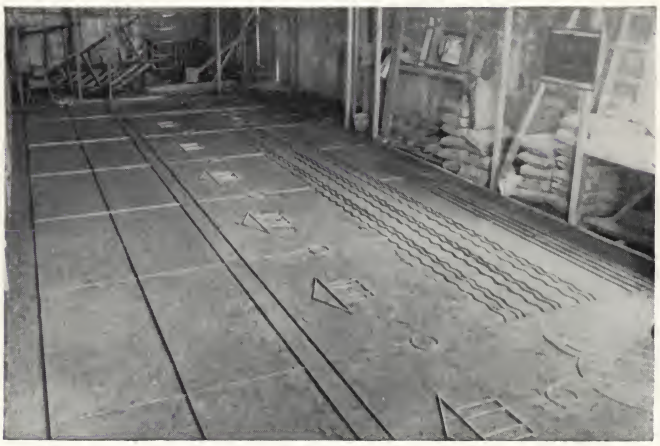
MANHATTAN TERRAZZO STRIPS

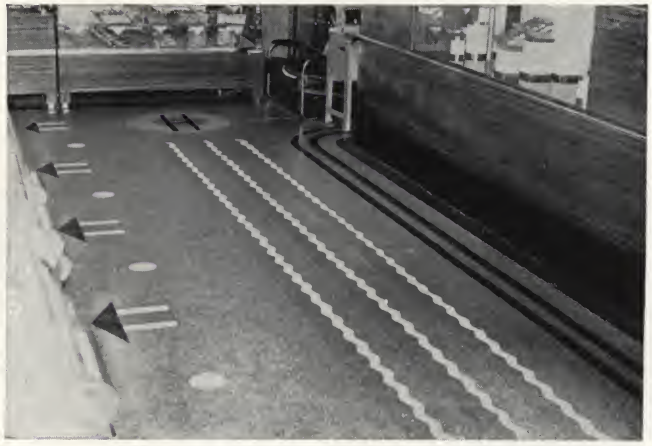
IN BRASS, WHITE ALLOY (ZINC), AND NICKEL SILVER



Top: Standard Strip—Type B, Center: Heavy Top Strip, Bottom: Strip for Linoleum, Rubber and Asphalt Tile Walkways

MANHATTAN TERRAZZO STRIPS MADE THIS DESIGN POSSIBLE





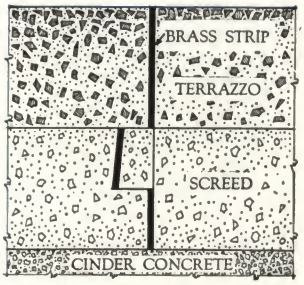
The use of dividing strips, in straight and curved shapes, of this modern bake shop floor are clearly evident. The photograph at the left shows the strips in place prior to the laying of the finished floor. The picture at the right shows the completed installation viewed from almost the same spot. The pleasing design is at once apparent. For food stores of any description terrazzo is unexcelled. It personifies cleanliness, is beautiful in appearance and its ease of maintenance makes it the ideal floor material. The use of Manhattan Dividing Strips will enhance the beauty of the design employed, and greatly add to the attraction value.

MANHATTAN TERRAZZO STRIPS

STANDARD STRIP TYPE B

For terrazzo designs of all kinds, the simplest, most pliable, economical and easily handled Manhattan Strip is the Type B Twin Anchor Brand. Made of brass (semi-hard), nickel-silver and white alloy (zinc) in various B&S gauges, and widths. Also in bronze and copper on special order.

The metal is rigid vertically, but sufficiently pliable horizontally to permit its conforming to practically any desired figures, shapes and designs. **The *curved projections* which are integral parts of the strip, positively anchor in the *screed* and do not depend on the finish coat of terrazzo to keep them in place.** The arc anchor does not form air pockets which result in cracking of the terrazzo. There is an angular incline to the arc so that when it penetrates the screed it shears off or displaces the screed, forcing it sideways through the opening, thus forming the lock. With this firm anchorage the strips cannot get out of line, horizontally or vertically, even while applying and rolling the terrazzo aggregate. The punched holes in the strip provide an additional lock.



Full Size Section Taken Through Arc Anchor

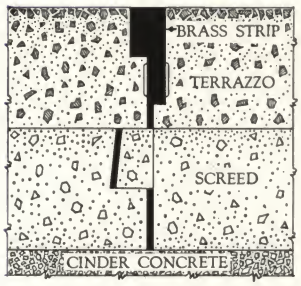
HEAVY TOP STRIP

Provides a wide wearing surface without the prohibitive cost of material and handling of a solid strip of the same thickness, saving in metal approximately 35% to 50% depending on the gauge used. It also has the advantage of shaping up easily for special design work.

Furnished with *brass, nickel-silver* or white alloy (zinc) top securely riveted to a bottom strip which is identical to the Type B strip. The bottom strip used with the brass top is of 20 B&S gauge brass, whereas it is made of 18 B&S gauge white alloy (zinc) for use with the nickel-silver top. Tops are available in ⅛, $\frac{3}{16}$ and ¼-in. thicknesses. ⅜ and ½-in. tops may also be had but of a different construction. The total width of all sizes of strips is approximately 1¼ in. Also furnished in widths of 1 and 1½ in. on short notice. All sizes are furnished in 6-ft. lengths only.

The bottom strip and heavy top is assembled by means of eyelet rivets (method fully covered by patents) spaced 2 in. apart. This method of fastening is firm and there is no danger of the assembly working loose or separating, either during installation or after the floor is completed and in use.

The bottom strip, being identical to the Type B, imparts to this heavy top all the features and advantages of the thin strip.



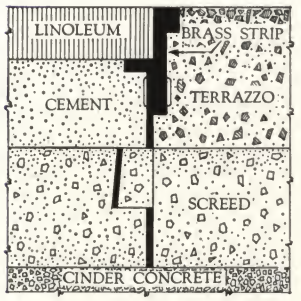
Full Size Section Taken Through Arc Anchor

STRIP FOR LINOLEUM, RUBBER AND ASPHALT TILE WALKWAYS

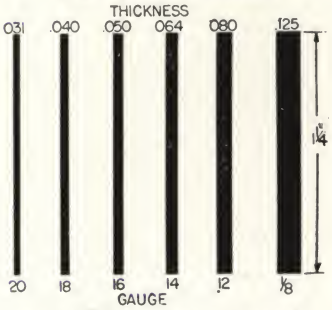
Recommended where it is desired to provide a walkway surface between terrazzo borders or cove bases. Constructed the same as the heavy top with the exception that an offset or projection below the top of the strip extends from the strip on one side. This projection provides a bearing surface for the linoleum at the proper depth to permit the surfaces of the linoleum and brass strip to be flush.

This strip is made of brass and white alloy (zinc) in the following sizes: ⅛-in. top for $\frac{3}{16}$ and ¼-in. linoleum and $\frac{3}{16}$-in. top for ¼-in. linoleum. Furnished in 6-ft. lengths only.

Points of Advantage—The strip provides an integral unit for receiving the linoleum, rubber or asphalt tile and provides a perfect abutment for the terrazzo border. The projection acts as a depth gauge for the cement finisher, which results in the linoleum, terrazzo border and brass strip being at *exactly the same level.* Cracking of the terrazzo border is controlled as in large floor areas where strips are used, and cracks in the screed under the linoleum are prevented from extending into the terrazzo border. The previously mentioned features of anchorage and rivet assembly also apply to this strip.



Full Size Section Taken Through Arc Anchor

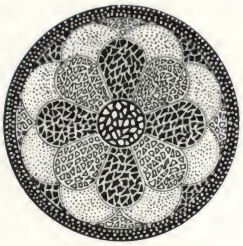


Actual Thickness of Standard Strip (B & S gauge)

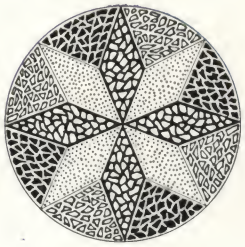
Specify Manhattan, or equal, and you are assured of the best

TERRAZZO FLOOR ACCESSORIES

CENTERPIECES



C-2



C-3

C-5

C-8

SOLID INSERTS

LETTERS

Script

ABCDEF

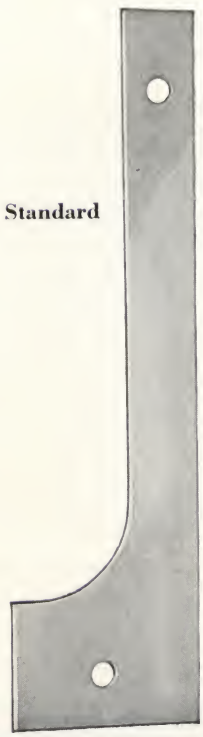
GHIJKL

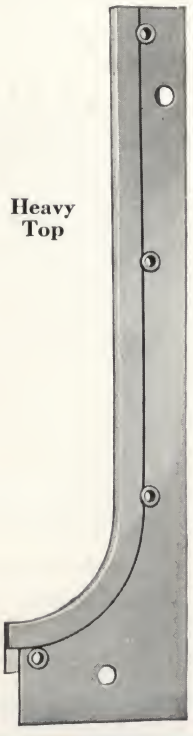
DESIGNS

The terrazzo accessories shown on this page play an important part in the creation of attractive and unusually decorative effects. We specialize in executing the unusual for store entrances and similar applications. For additional information, write direct.

COVE DIVIDERS

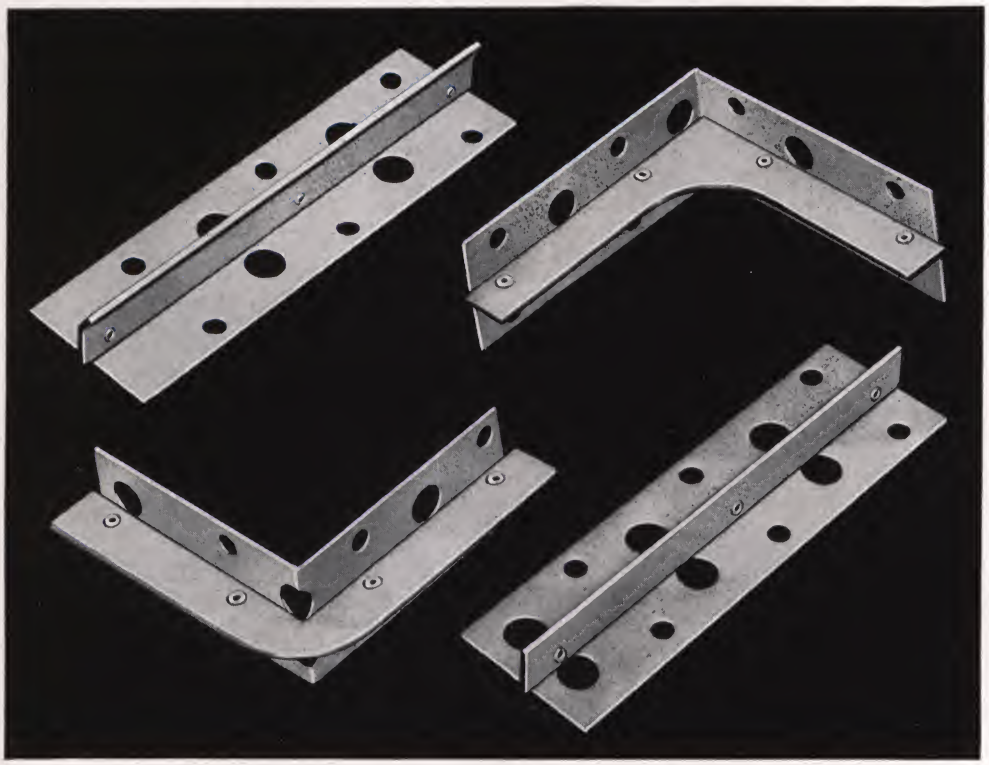
Brass and White Alloy (Zinc)



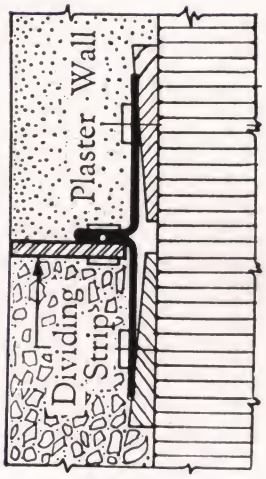


MANHATTAN BASE BEADS AND CORNERS

FLUSH AND PROJECTING TYPE



Base Beads and Corners are Furnished in Brass and White Alloy Zinc or other non-corrosive metal.



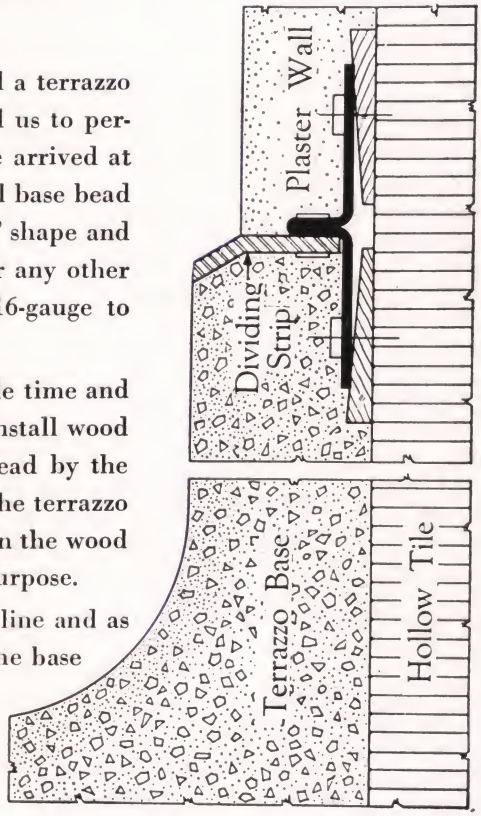
Flush Type

It is frequently desirable, when installing a terrazzo floor, to install a terrazzo base as well. The possibilities of terrazzo as a base material have lead us to perfect a noncorrosive base bead. After considerable experimentation, we arrived at the two types of base beads shown on this page which admirably fill all base bead requirements. The bottom member is made of galvanized metal in "T" shape and to the leg of this member we fasten strips of brass, white alloy zinc or any other noncorrosive metal that may be specified, of any thickness from 16-gauge to ¼ inch furnished in 10 foot lengths.

A base bead of this type enables the contractor to save considerable time and money. Before the development of this base bead, it was necessary to install wood grounds for the terrazzo base. The installation of this metal base bead by the furring and lathing man ended a long standing controversy between the terrazzo man and the plasterer as to who should install the wood ground. When the wood grounds were removed they were a total loss and served no useful purpose.

The Manhattan *Type G* Base Bead serves as a permanent dividing line and as a permanent ground between base and plaster. The exposed edge of the base bead being solid permits extensive grinding without showing breaks—a common difficulty when folded galvanized base beads are used.

When specifying, mention Type G (flush or projecting type) in . . gauge as manufactured by Manhattan Terrazzo Brass Strip Company.



Projecting Type
Method of Installation

MANHATTAN TERRAZZO BRASS STRIP CO., INC.

1915 PARK AVENUE, NEW YORK, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

NORTON COMPANY

Alundum Aggregates for Non-slip Terrazzo and Cement Floors and Stairs
Alundum Floor and Stair Tile and Ceramic Mosaic Tile

WORCESTER, MASS.

ALUNDUM AGGREGATE FOR TERRAZZO

Description—Alundum Aggregate is identical in composition and structure with Alundum Tiles but is crushed in convenient sizes for use in terrazzo. When employed as recommended it provides dependable safety—terrazzo floors and stairs that are effectively non-slip, wet or dry. Its hardness assures high serviceability and its non-resonant quality makes terrazzo floors quiet and comfortable.

SIZES AND COLORS

Class	Sizes, in.	Aggregate colors
No. 1-C No. 00	$\frac{3}{32}$—¼ $\frac{1}{64}$—$\frac{3}{32}$	Brown, Gray, Buff, Cream, Green, Red, Black

Monolithic Terrazzo

Complete specifications for the installation of Alundum Aggregate in monolithic terrazzo floors and ramps are given in Catalog C, a copy of which will be furnished on request. These specifications, if properly followed, should result in a good terrazzo job with adequate non-slipping efficiency.

It is urgently recommended that architects clearly specify their desires regarding terrazzo and then see that the installing contractor lives up to them.

Terrazzo Made Non-slip by Alundum Aggregate in Radio City, New York

Precast Terrazzo

For many buildings, terrazzo in the form of precast tiles and treads or art marble, is preferred instead of terrazzo poured plastic on the job. It is recommended that Alundum Aggregate be always used in precast treads to make them dependably non-slip and in precast tile when it is used on ramps, where water is likely to be present, or in other locations where there would be a slipping hazard with ordinary terrazzo. Precast tiles and treads should be made by concerns having suitable experience in the work and equipped with proper machinery to produce a quality product.

NORTON COMPANY has made arrangements with qualified firms throughout the country for the use of Alundum Aggregate in precast products and will be glad to furnish their names and addresses upon request.

Specifications—Catalog C also gives complete specifications for the use of Alundum Aggregate in precast treads and platforms and in precast tile.

Precast Alundum Aggregate Treads on an Auditorium Stairway

ALUNDUM CEMENT FLOOR AGGREGATE

Description—Designated as Alundum (C.F.) Aggregate it is the same as terrazzo aggregate except harder and tougher and not made in colors.

Uses—Alundum (C.F.) Aggregate is used in cement finish floors, stairs, ramps and sidewalks. Because its angular, slightly porous structure provides greater bonding power with cement this aggregate is more effective than abrasive grain—providing a more non-slip and durable surface.

Sizes—Coarse, ¼ to ½ in. Fine, $\frac{1}{32}$ to ¼ in.

Specifications—Complete specification data on use of Alundum (C.F.) Aggregate in cement floors and stairs and also in asphalt floors is given in Catalog D. Copy on request.

ALUNDUM TILES (FLOOR, STAIR, CERAMIC MOSAICS)

Description—Alundum Tiles are composed of aluminum oxide abrasive (Al_2O_3) ceramically bonded by special clays to produce a structure which assures permanent safety and exceptional resistance to wear. Water, oil and other liquids do not lessen the non-slip effectiveness of Alundum Tiles. They are not affected by climatic changes nor by acids, except hydrofluoric.

Guarantee—Norton Alundum Tile is guaranteed (1) against defects in material or workmanship; (2) to retain its non-slip properties throughout its entire life if it is kept free from an accumulation of dirt or other foreign substances; (3) for a period of ten years against wear resulting from foot traffic making replacement necessary.

Uses—Alundum Tiles (floor, stair and mosaics) are for use wherever there is a slipping hazard to overcome and wherever exceptional resistance to wear is desirable—vestibules, stairs, showers, swimming pools, kitchens and similar places in schools, hospitals, theaters, industrial plants and other public or commercial buildings.

Specifications—Complete specification data on Alundum Stair and Floor Tile and Alundum Ceramic Mosaic Tile is given in Catalogs A and B, respectively, copies on request.

A Natatorium Floor Made Non-slip, Even When Wet, by Alundum Ceramic Mosaic Tile

ALUNDUM FLOOR AND STAIR TILE

Floor Tile		Stair Tile	
3 x 1½ x ½ in.	3 x 3 x ½ in.	6 x 4 x ½ in.	6 x 4 x ¾ in.
6 x 3 x ½ in.	6 x 6 x ½ in.	6 x 6 x ½ in.	6 x 6 x ¾ in.
6 x 3 x ¾ in.	6 x 6 x ¾ in.	7 x 7 x ⅝ in.	9 x 6 x ¾ in.
9 x 4 x ¾ in.	9 x 6 x ¾ in.	9 x 4 x ¾ in.	12 x 12 x 1¼ in.
SPECIAL SIZES		SPECIAL SIZES	
7 x 3½ in.	12 x 12 in. 2-in. hexagonal	6 x 6 x 1¼ in. 7 x 7 x 1¼ in. 9 x 6 x 1¼ in.	7 x 7 x 1 in. 9 x 4 x 1 in. 9 x 6 x 1 in.

ALUNDUM CERAMIC MOSAIC TILE

¾-in. square 1⅛-in. square	1-in. hexagonal 1¼ in. hexagonal	1⅛ x 2¼ in. oblong

Colors—Brown, Buff, Gray, Blue-gray, White Granite, Green, Tan, Red, Black.

THE NATIONAL TERRAZZO & MOSAIC ASSOCIATION, INC.

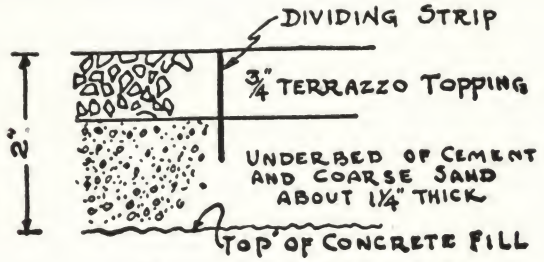
Specifications for Terrazzo Work and for Mosaic Work

1406 G Street, N. W., WASHINGTON, D. C.

SPECIFICATIONS FOR TERRAZZO WORK

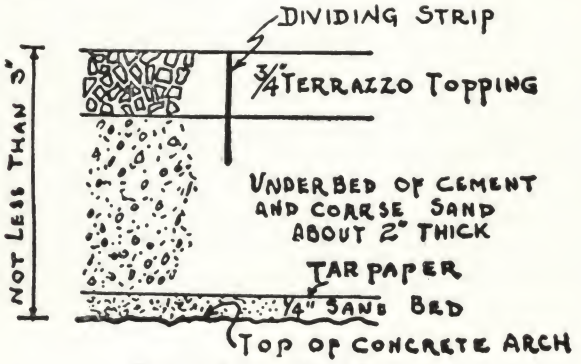
Methods—*NOTE: Two methods are used in laying terrazzo floors over concrete construction. One is to bond it to the structural slab; the other to separate it.*

When the first method is used, the concrete fill is provided for under another heading, and should be left 2" below the finished floor. This concrete fill can be made of cement, sand, and hard coal cinders in proportion of 1:1:6. Soft coal cinders must not be used. Slag, broken stone, or gravel are good aggregates for concrete fill under terrazzo floors. Before the terrazzo contractor installs his underbed, he must see that this concrete fill is thoroughly cleaned of plaster droppings, wood chips, and other debris. He should thoroughly slush it with neat cement grout to insure a good bond.



Terrazzo Bonded to Concrete

The second method is used in buildings where cracking is anticipated either from settlement, or expansion and contraction, or vibration. In this case, the terrazzo contractor carries his work from the structural floor slab up. This method requires a total thickness of at least 3". The concrete slab is covered with a thin bed of dry sand over which a sheet of kraft or tar paper is laid. Over the paper, the underbed is installed as in the first method; except that coarser aggregate, such as cinders or fine gravel, can be used in the underbed where its thickness exceeds 2½". When this method is used, the cracks originating in the structural slab terminate at the sand bed and are not likely to appear on the finished surface.



Terrazzo Separated from Concrete

When terrazzo is used over wood floors, a thickness of not less than 2" is required and the following procedure should be followed:

First, cover the wood floor with tar paper. Over this paper, nail a reinforcing wire fabric. Then, proceed to lay the concrete underbed as specified under the second method.

Underbed—The underbed for terrazzo, consisting of one (1) part Portland cement, and four (4) parts coarse screened sand, shall be spread and brought to a level not less than ½" nor more than ¾" below the finished floor.

Strips—Into this underbed, while still in a semi-plastic state, install dividing strips. These shall be 1¼" deep and have proper anchoring features; or preassembled decorative units may be used. Strips shall form borders and divide the fields into panels ——x——in size, or as shown on the drawings.

NOTE: The strips most commonly used are of half-hard brass. Other non-corrosive metals such as zinc alloy and nickel-silver are suitable. The thickness of the strip should be named using Brown and Sharpe gauge. Metal strips less than ⅛" thick are made of uniform thickness for their entire depth. Strips ⅛" thick or more are of the "heavy top" type having the top member not less than ⅜" deep. Composition strips can be used when colored strips are desired.

Terrazzo—The terrazzo topping shall be not less than ½" or more than ¾" in thickness, and shall be of granulated marble of colors to be selected by the architect. The topping shall be uniform in composition, and the same marble granule that appears on the surface shall be used for its entire thickness.

The granule shall be of such proportions of size Nos. 1-2-3 as shall hereafter be determined. Samples of the terrazzo shall be made, in duplicate, for approval by the architect.

NOTE: Name the color of marble granule to be used, and whether domestic or imported. Consult our catalogs No. 1 and No. 2 for color combinations, etc.

Mix—Composition for terrazzo mixture shall be in the proportion of two hundred (200) pounds of marble granule to one hundred (100) pounds of Gray or White Portland cement, mixed dry. Add water after the mixing to make the mix plastic but not flowing. Where the cement is to be colored to obtain a desired shade, the color pigments shall be lime-proof and of a non-fading quality.

Installation—The mix shall then be placed in the spaces formed by the dividing strips and rolled into a compact mass by means of heavy stone or metal rollers until all the superfluous cement and water is extracted; after which, it must be hand troweled to an even surface, disclosing the lines of the strips on a level with the terrazzo filling. The finished surface shall show a minimum of 70% marble granule.

Curing—The floor must be kept moist for the next six (6) days at least.

Surfacing—When, in the judgment of the terrazzo contractor, the floors have set sufficiently hard, they shall be machine rubbed, using No. 24 grit abrasive stones for the initial rubbing. They shall then be resurfaced using a No. 80 grit abrasive stone, after which a light grouting of neat Portland cement of the same kind and color as the matrix shall be applied to the surface filling all voids. The grouting shall remain until the time of final cleaning.

Finishing—Floors shall have the grouting coat removed by machines, using a stone not coarser than No. 80 grit. This cleaning or fine-stoning shall not take place sooner than seventy-two (72) hours after the floor has been grouted, after which it must be washed thoroughly and left in condition acceptable to the architect.

Warning—Acids are injurious to terrazzo and should not be used.

Non-slip Floors—Ramped or other surfaces in terrazzo floors so specified, are to be made non-slip by the addition of an abrasive aggregate.

For heavy duty floors, the proportion shall be two (2) parts of abrasive to three (3) parts of marble granule and the abrasive aggregate shall be mixed in the terrazzo topping for its entire thickness. For light traffic floors, the abrasive shall be sprinkled on the surface only, so that the finished floor shows four (4) parts marble granule and one (1) part abrasive aggregate.

Terrazzo Base, etc.—Where shown on plans or specified, provide a base —— inches in height, coved at the floor to —— radius, the top projecting ¼ in. beyond the line of finished plaster.

NOTE: If base is required without projection at top, specify it to be set flush with the finished plaster. Metal base screeds or any temporary grounds are furnished and set by others, and should be specified under another heading.

Base shall be divided into sections not exceeding five (5) lineal feet, using base dividers of B. & S. gauge No.——. The walls back of the base shall have a scratchcoat of cement and sand mortar brought to a line ⅜ in. back of the finished face of the base, into which the base dividers shall be set.

NOTE: If base is to be applied against wood or metal studding, metal lathing must be provided for under lathing specifications.

The surfacing and grouting of terrazzo base shall be done in all respects as described above for the floor. Base shall be finished with a very fine stone, so as to leave the surface at a hone finish. Specifications should state whether terrazzo plinth blocks are required, and whether moulded or plain.

Terrazzo Stairs—Where terrazzo stairs are shown or specified to be built upon a concrete slab, the concrete contractor shall form the rough concrete work so as to allow 2 in. from the top of rough concrete to the top of finished terrazzo tread, and 1¼ in. from the face of rough concrete riser to finished terrazzo riser.

The rough concrete for strings and curbs shall be so placed by the concrete contractor, as to allow 1¼ in. for the scratchcoat and finished terrazzo.

Where steel stairs are installed to be finished with terrazzo, same are to be covered with metal lath securely anchored to steel sub-stairs by the lathing contractor, allowing for terrazzo from 2 in. to 3 in. on the tread, and 1½ in. on the riser. Platforms are to be treated in the same manner, allowing not less than 3 in. for terrazzo and setting bed.

On pan-type stairs where treads only are to be of terrazzo, 2½ in. shall be allowed for terrazzo and setting bed.

Pan treads and platforms must be well reinforced with steel pencil rods. Thickness of terrazzo topping shall be ¾ in.

NOTE: Refer to description and details of terrazzo stairs in the National Terrazzo and Mosaic Catalog No. 1 or Construction Detail Bulletin.

Non-slip Work—Treads, Platforms, and Landings shall be made non-slip by mixing 40% abrasive aggregate with 60% marble granule. Colors of marble granule and abrasive aggregate to be as selected

Terrazzo Wainscots—Under another heading, walls that are to be finished with terrazzo are prepared with a scratchcoat of Portland cement and sand to within 1 in. of finish. Where wall surfaces are of an absorbent material, the plasterer shall use waterproofed cement with the sand for the scratchcoat.

The terrazzo contractor shall apply his setting bed mortar over the scratchcoat to within ⅜ in. of the finished face. This shall be composed of one (1) part cement and three (3) parts sand.

Dividing strips No.—— gauge shall be inserted in the setting bed forming bases and caps and dividing the dado into sections, all as shown on the plans. The terrazzo finish shall then be applied, pressed, and troweled plumb and true.

Terrazzo wainscot shall finish flush with plaster above or project —— inches beyond same as shown on plans. Terrazzo wainscot shall be machine rubbed and brought to a smooth hone finish (or to a polished finish).

Terrazzo Partitions—Metal lath construction shall be provided by metal lath contractor as follows: Erect forms of metal studding placed not over 12 in. c. to c. and securely fastened at corners, at walls, and over openings; and well bedded into floors. This framing shall be covered with galvanized expanded metal lath.

Plaster contractor shall apply to the metal lath a scratchcoat of one (1) part Portland cement and two (2) parts screened sand, plumb and true, to within 1 in. of the finished face.

Upon surfaces thus prepared, the terrazzo contractor shall apply and install the setting bed and terrazzo finish.

The finished thickness of partitions shall not exceed 2½ in.

Terrazzo partitions shall be machine rubbed and brought to a smooth hone finish (or to a polished finish).

SPECIFICATIONS FOR MOSAICS

Marble mosaic shall be prepared mounted on paper in the mosaic shop. Patterns and ornamental designs shall be as per approved full-size details.

Wherever marble mosaic floor is to be laid, the concrete foundation will be left 2 in. below the finished floor. Over this, the mosaic worker shall lay an underbed of mortar composed of one (1) part cement and three (3) parts sand, levelled off 1 in. below the finished floor. Then the setting coat shall be spread, composed of one (1) part Portland cement, two (2) parts sand, and a sufficient quantity of lime to make the mortar plastic. The mosaic tesserae shall be embedded into this setting coat.

The mosaic shall be pressed and tamped into the mortar. The paper back shall be removed, and the joints filled with cement. After the mortar has set, the whole floor shall be rubbed by machine and by hand where the machine cannot reach. The joints shall be then carefully grouted again full and smooth. At completion, clean the floor and deliver the work with a smooth hone finished surface.

Glass mosaic for mural decoration shall be prepared on paper in accordance with designs and cartoons, furnished or approved by the architect, in a manner similar to that specified for marble mosaic, and shall be set in a mastic composed of a mixture of one (1) part Portland cement, and one (1) part lime putty, and three (3) parts clean sharp sand.

The scratchcoat for glass mosaic work shall be of a good quality mixture of Portland cement and screened sand applied to the surface and given a fine cross scratch by plaster contractor who shall leave a uniform thickness of ¾ in. to receive the mosaic work.

All mosaic work shall be well grouted. Glass mosaic shall be left natural and washed perfectly clean.

GENERAL SPECIFICATIONS

Guarantee for Terrazzo and Mosaic

All work shall be guaranteed for a period of one year against defects caused by the use of inferior materials or workmanship.

Maintenance of Terrazzo and Mosaic

Consult your terrazzo contractor for "sealers" and treatments suitable for terrazzo.

Soaps and scrubbing powders containing caustic alkali should never be used in the maintenance of terrazzo and mosaic surfaces.

To properly care for new terrazzo and mosaic floors, they should be scrubbed two or three times a week, and mopped on alternate days. Use a neutral soap, free from alkali, acids, or other strong ingredients, as they may ruin the floor. The floor must be rinsed after each washing, so as to prevent it from becoming slippery.

After two or three months of this treatment, the floor will acquire a beautiful natural sheen, and will require less work for its upkeep.

Working Conditions

The following facilities are to be provided free of charge to the terrazzo and mosaic contractor to enable him to carry out his work most economically and with efficiency:

Space for storing his materials and equipment.

Water, light, and heat above freezing point.

Use of elevator or other hoisting facilities and gangways.

Electric power and maintenance of 110 and 220 Volt with connections on each floor, or at least on alternate floors.

Rubbish caused in doing his work will be collected by the terrazzo contractor and placed where designated on each floor, for removal and disposal by others.

PASCAL SYLVESTER COMPANY

Originators of Metal Designs for Terrazzo Work

TELEPHONE
Superior 9782-3

325 West Huron Street
CHICAGO, ILL.

Our strips are manufactured and sold exclusively through Revere Copper and Brass, Inc.

Sylvester Dividing Strips for Terrazzo Floors

We manufacture a complete line of Terrazzo Dividing Strips for all purposes. All leading Terrazzo contractors know that our strips are equal or better than others on the market. Through our connection with REVERE COPPER & BRASS, INC., a full line of strips is carried in stock for immediate shipment to any part of the country.

Together with our regular line of Terrazzo Dividing Strips, we have added a cushioned top in ¼-in. thickness made of pure colored rubber for expansion and non-slip purpose. These strips come in six beautiful colors for decoration, etc.

Whenever you want the Best at No Additional Cost, specify SYLVESTER STRIPS.

Samples will be furnished upon request.

Prefabricated Design Units for Terrazzo Work

We are also the originators of the unit system, having the only unique patented system for prefabricated design units. With this system we fabricate all types of designs, such as names, monograms, all-over patterns, etc.

Aisle of Ascension Church, Oak Park, Ill.

The prefabricated design unit system makes possible the execution of floors as shown in these illustrations. There are countless others—too numerous to mention or show—but a fairly good idea of "design unlimited" can be gained by observing the illustrations below.

Specification

All design work consisting of: (fill in exact requirements as per suggestions below or as required)

.....

(1) Design Units. (2) Borders. (3) Names. (4) Monograms. (5) Hospital Grilles, etc., shall be fabricated from ..... gauge ..... metal, and executed as per the architect's designs.

All strips shall be firmly anchored and fit perfectly.

Top edges shall be level and free from defects.

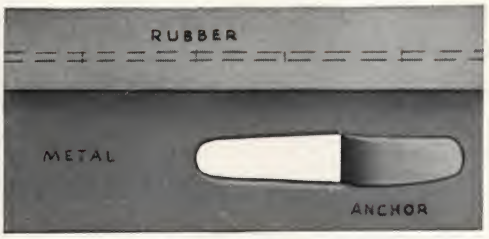
All work shall be made in accordance with Sylvester Patent System of Design Work.

This work shall be provided by terrazzo contractor.

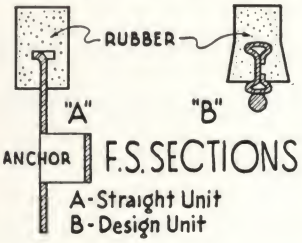
Sun Room in Residence, Louisville, Ky.

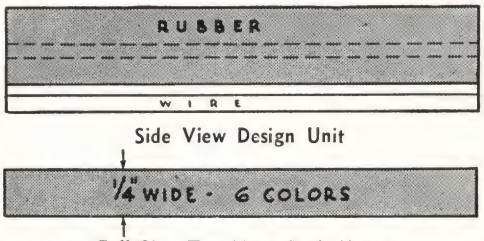
Oval Lobby, Detroit Times Bldg., Detroit, Mich.

SYLVESTER COLORED RUBBER STRIPS

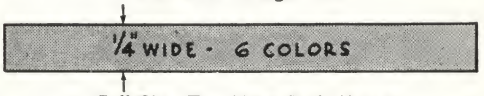


Side View Straight Unit





Side View Design Unit



Full Size Top View Both Units

The Sylvester Colored Rubber Strip is the result of years of experimental work and was developed originally from our special skating rink strip. Live rubber is used in its construction to take care of expansion and contraction as well as give it non-slip qualities which, of course, is desirable.

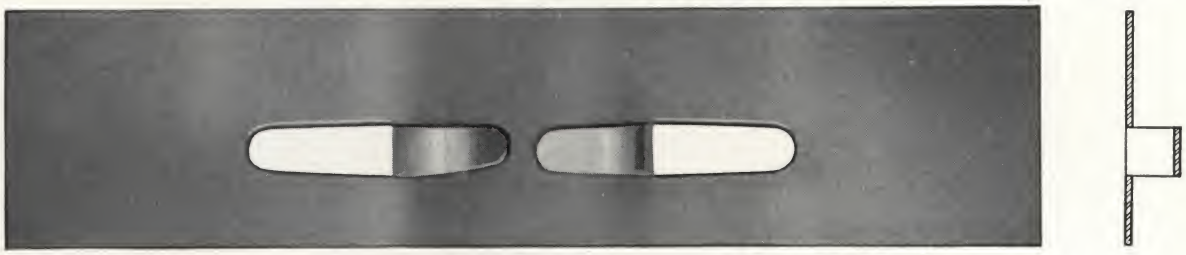
It is available in a variety of beautiful colors, the color strips being ¼ in. wide on top surface.

Rubber strip is securely anchored to metal sub-strip below, which is an 18-gauge unit specially designed for this purpose. Straight rubber strips will bend to take care of any special curve.

Designed strips also available for prefabricated design units.

Specification—Rubber strips, as shown on drawings, shall be as manufactured by PASCAL SYLVESTER COMPANY and shall be ¼ in. wide on top surfaces and in color selected. Rubber top of either straight or designed strips shall be securely anchored to metal sub-strips. Metal sub-strips shall be as detailed and provided with anchors to secure same in cement bed.

SYLVESTER STRAIGHT METAL STRIPS



No. 1 FS. Detail Sylvester Standard Strip

Standard Strips

Our standard strip illustrated above in full size section is very simple and at the same time effective.

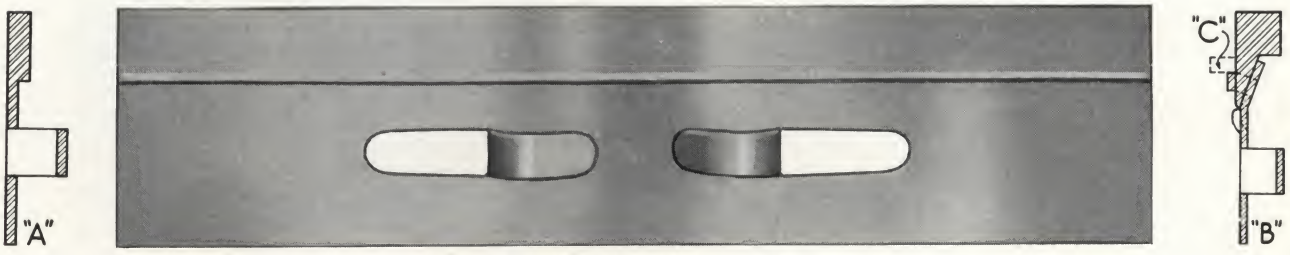
It can be handled efficiently on the job and is well thought of by craftsmen in the terrazzo industry who have used it for years.

The lock or key holds the strips firmly in place after cement is set.

This strip is available in all gauges of brass from 20 to 12 and also in white metal gauges 18 to 12. Strips are of 1 in. width. Brass strips are semi-hard stock; white metal are zinc alloys of correct hardness.

We have adequate stock of most sizes on hand in warehouses available for immediate delivery anywhere in United States.

Specification—All Standard Straight Metal Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.



No. 2 FS. Detail Sylvester Heavy Top Strip

Heavy Top Strip

Our heavy top strip is used in cases where a wide band is required on top.

We have, therefore, combined a heavy top strip with an 18-gauge strip securely anchored to same. This provides economy with same results as a solid heavy strip.

Our heavy top strip is available in brass and white metal in ⅛, $\frac{3}{16}$ and ¼ in. top widths.

This type of strip has same anchor as standard strip.

Specification—All Heavy Top Straight Metal Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.

No. 3 Sylvester Linoleum Type Strip

This is a special strip recommended where requirements call for linoleum on one side and terrazzo on the other. It is similar in construction to the heavy top strip, except that it has a leg set down below finished floor at proper depth to receive linoleum or other material. See Detail "C" shown above for heavy top strips.

Anchoring method for this strip is the same as for other strips. This strip comes in brass and white metal.

Specification—All Linoleum Strips, shown on drawings and specified, shall be manufactured by PASCAL SYLVESTER COMPANY and installed by terrazzo contractor. Strips shall be accurately manufactured from semi-hard stock of metal selected and provided with anchors every 6 in.

ZANIN BRASS CORP.

Brass Strips for Terrazzo and Composition Floors

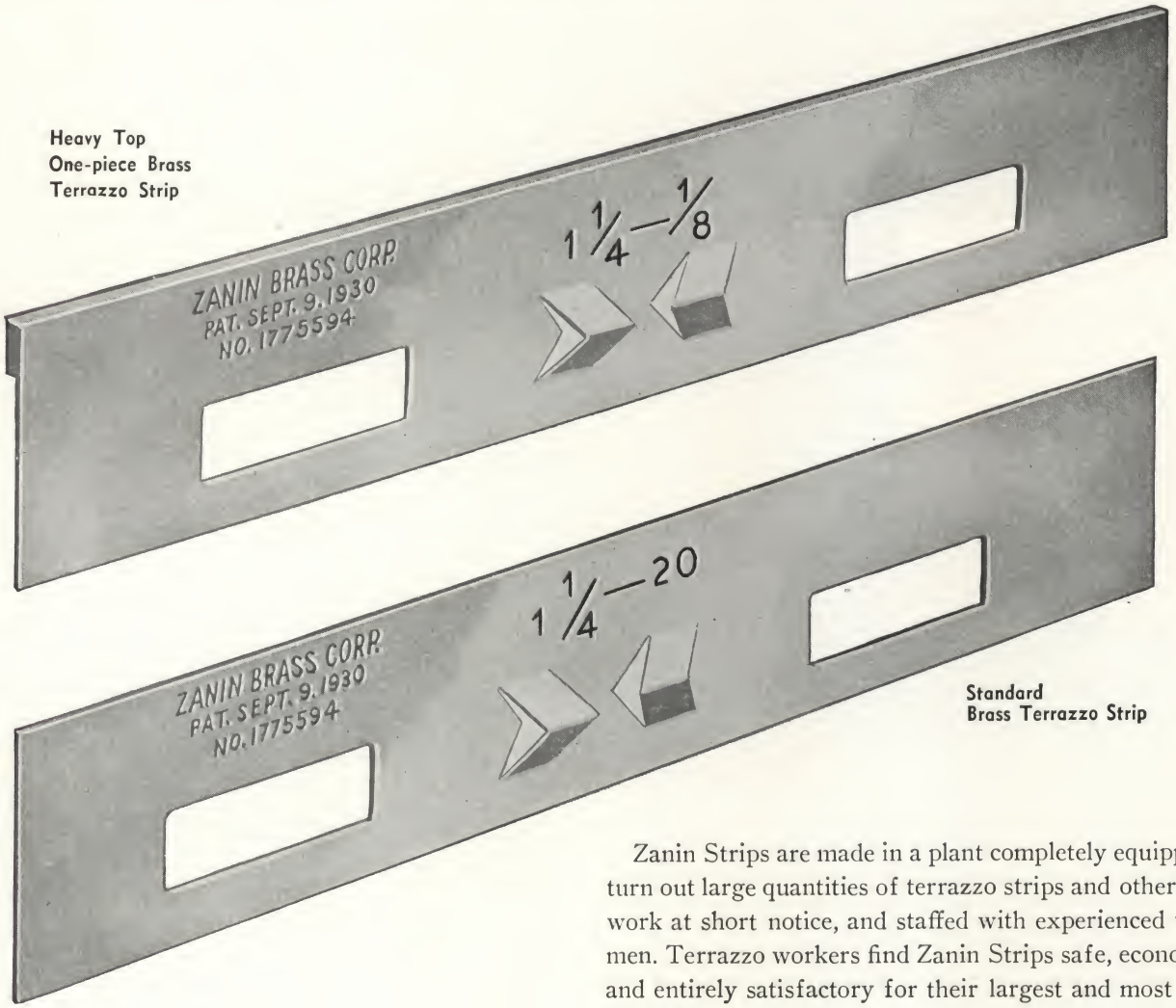
522 West 38th Street

NEW YORK, N. Y.

ZANIN HEAVY TOP BRASS TERRAZZO STRIP

This strip is all in one piece, making it impossible for the top bar to separate, which happens in cases where the top bar is attached to a lighter lower member. The fact that it is all in one piece makes it also more rigid and at the same time easier to work with when making designs. This heavy top brass strip is obtainable in 1/8, 3/16 and 1/4 inch. Our strips are manufactured under patent No. 1775594.

All Zanin Brass Strips for terrazzo, marble, composition and other floor work are made of a super-grade of strip brass and also of white alloy. They are simple in design and perfectly suited for the most complicated type of floor work. You will find them pliable horizontally and adequately rigid vertically so that they may be adapted to any design for which they may be used. The strip anchors are punched from the metal itself and offer a sure grip under all conditions.



Zanin Strips are made in a plant completely equipped to turn out large quantities of terrazzo strips and other brass work at short notice, and staffed with experienced workmen. Terrazzo workers find Zanin Strips safe, economical and entirely satisfactory for their largest and most intricate jobs.

Dimensions

All strips come in 6-foot lengths. We carry at all times a complete stock of brass and white alloy strips from 20-gauge to 12-gauge flat strips in 1 and 1¼-in. widths.

UNIVERSAL ATLAS CEMENT CO.

UNITED STATES STEEL CORPORATION SUBSIDIARY

GENERAL OFFICES

135 East 42nd Street

NEW YORK CITY

PRODUCTS

ATLAS WHITE PORTLAND CEMENT
ATLAS PORTLAND CEMENT

ATLAS WATERPROOFED WHITE PORTLAND CEMENT
UNIVERSAL PORTLAND CEMENT

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

Made with marble chips, portland cement and water plus mineral color pigment where desired, terrazzo floors have these advantages: (1) colorful beauty, (2) flexible, made-to-order designs, (3) the permanence and durability of concrete, (4) economy and ease of installation and maintenance.

On the following three pages are illustrations of typical fine terrazzo floors and twenty-four sample plates of fine terrazzo made with Atlas White in combination with various marbles. Some of these samples have a pure white matrix of uncolored cement for background. In others the matrix has been colored to blend with the marble coloring. Samples are actual size and the colors are as true as mechanical reproduction makes possible. They can be safely used in specifying terrazzo colors and marbles.

(*Above*) Atlas White portland cement was used in the beautiful terrazzo floors of the Texas State Capitol. Views here are of the central passage and "seal of the nations." C. H. Page of Austin was architect. Bubi Jessen, Austin, prepared sketches and designs. Art Mosaic & Tile Co., Toledo, and J. B. Martina Mosaic Company, Denver, were the terrazzo contractors jointly.

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(*Left*) Terrazzo floors of Atlas White in Sebastian County Court House, Fort Smith, Arkansas. Architects, Bassham & Wheeler, and E. Chester Nelson, all of Fort Smith. Contractor, Manhattan Construction Company, Muskogee, Oklahoma. Terrazzo contractors, Taylor Marble & Tile Company, Oklahoma City. Owners representative, County Judge R. P. Strozier.

FOR OTHER INSTALLATIONS SEE FOURTH PAGE

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

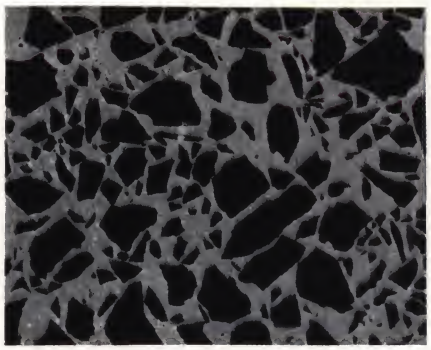
FOR 24 COLOR SPECIMENS OF FINE TERRAZZO, SEE NEXT TWO PAGES

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

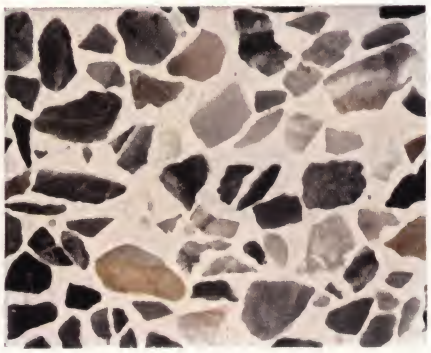
1 *Domestic White marble (No. 1 and No. 2 chips) with white portland cement.*

2 *Botticino marble (No. 1 and No. 2 chips) with white portland cement.*

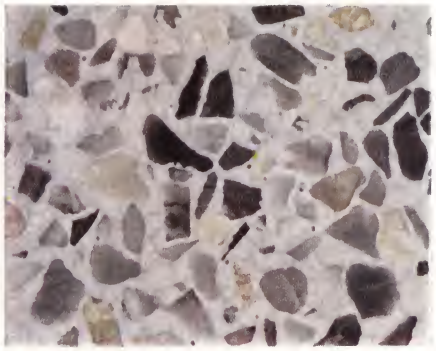
3 *Belgian Black marble (No. 1 and No. 2 chips) with white portland cement.*



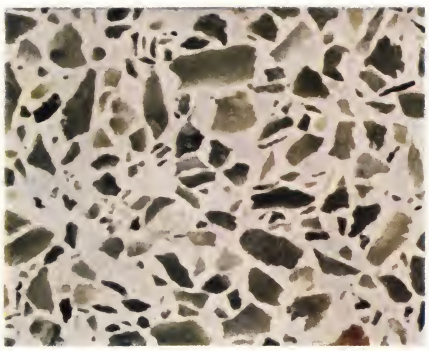
4 *Belgian Black marble (No. 1 and No. 2 chips) with white portland cement and black pigment.*



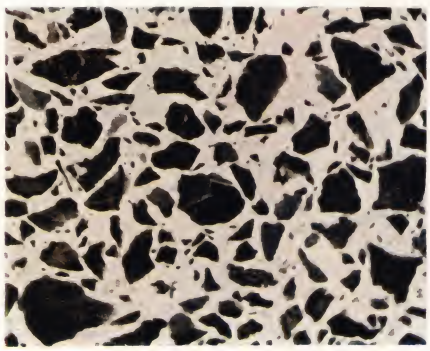
5 *Blue Turquin marble (No. 1 and No. 2 chips) with white portland cement.*



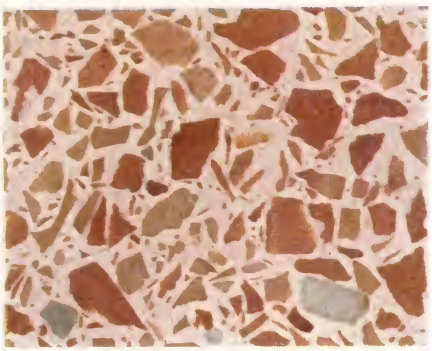
6 *Blue Turquin marble (No. 1 and No. 2 chips) with white portland cement and blue pigment.*



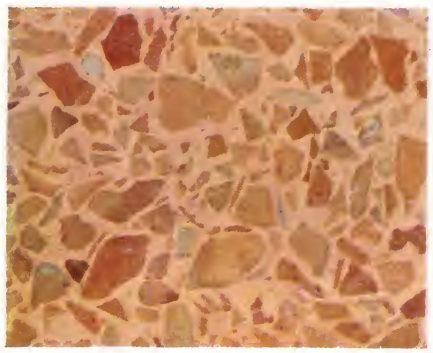
7 *Royal Green marble (No. 1 and No. 2 chips) with white portland cement.*



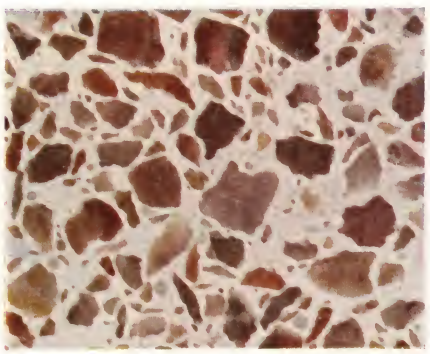
8 *Cardiff Green marble (No. 1 and No. 2 chips) with white portland cement.*



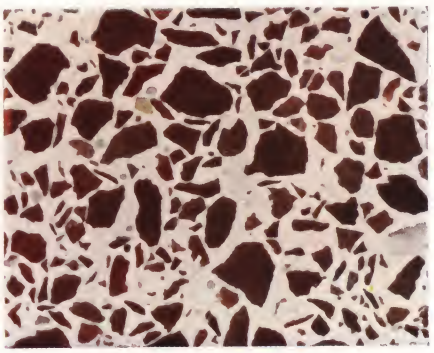
9 *Yellow Verona marble (No. 1 and No. 2 chips) with white portland cement.*



10 *Yellow Verona marble (No. 1 and No. 2 chips) with white portland cement and yellow pigment.*

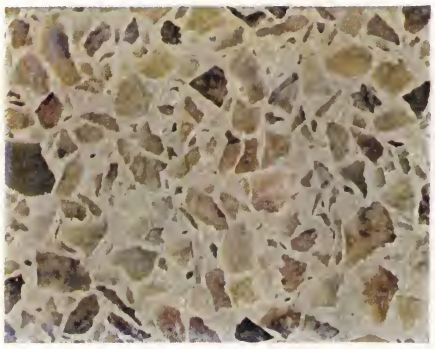


11 *Pink Tennessee marble (No. 1 and No. 2 chips) with white portland cement.*

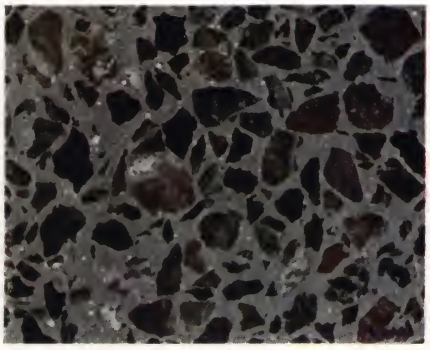


12 *Turkish Red marble (No. 1 and No. 2 chips) with white portland cement.*

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

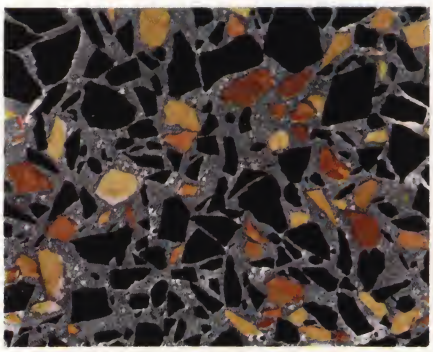


13 *Verdolite marble (No. 1 and No. 2 chips) with white portland cement and green pigment.*

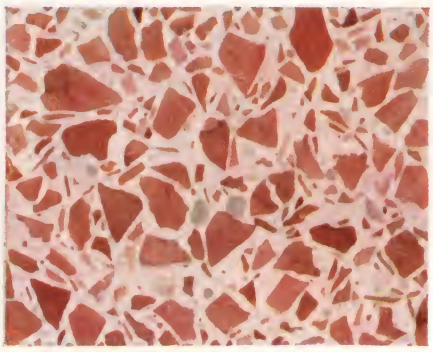


14 *Red Levanto marble (No. 1 and No. 2 chips) with white portland cement and green and black pigments.*

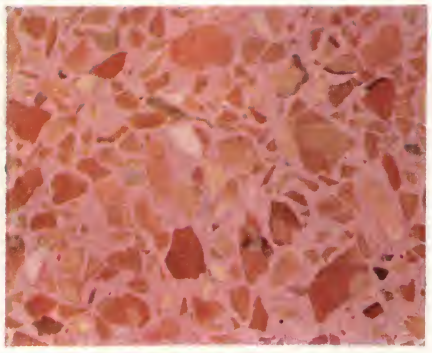
15 *Travertine marble (No. 1 and No. 2 chips) with white portland cement and yellow pigment.*



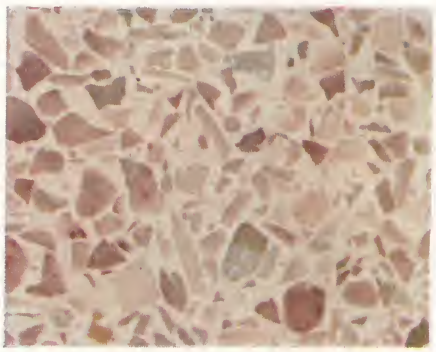
16 *Belgian Black marble and Red Verona marble (No. 1 and No. 2 chips of both) with white portland cement and black pigment.*



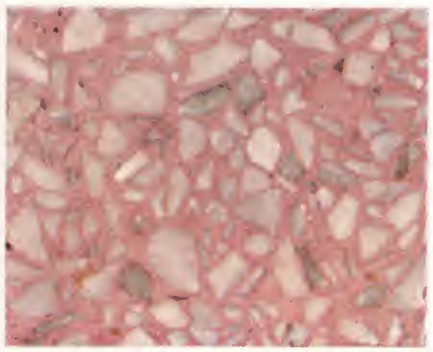
17 *Red Rosa marble (No. 1 and No. 2 chips) with white portland cement.*



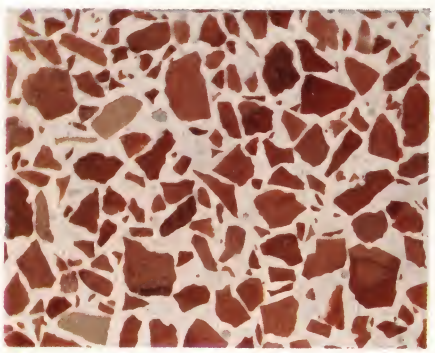
18 *Red Rosa marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*



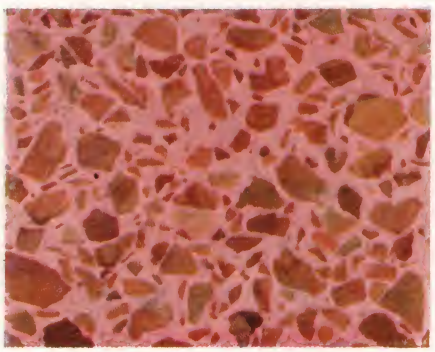
19 *Coral Pink marble (No. 1 and No. 2 chips) with white portland cement.*



20 *Coral Pink marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*

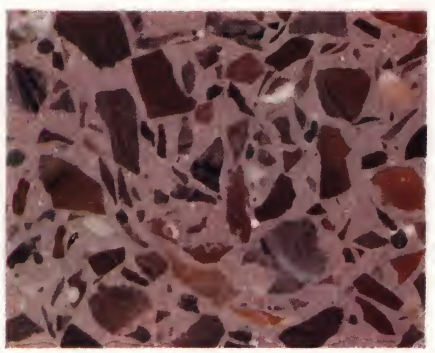


21 *Red Verona marble (No. 1 and No. 2 chips) with white portland cement.*



22 *Red Verona marble (No. 1 and No. 2 chips) with white portland cement and red pigment.*

23 *Red Champlain marble (No. 1 and No. 2 chips) with white portland cement.*



24 *Red Champlain marble (No. 1 and No. 2 chips) with white portland cement and red and black pigments.*

THESE PLATES ARE ACTUAL SIZE, TRUE COLOR REPRODUCTIONS OF FINE TERRAZZO SPECIMENS

FINE TERRAZZO MADE WITH ATLAS WHITE PORTLAND CEMENT

Terrazzo floor of Atlas White portland cement in City Hall and Auditorium, Montgomery, Alabama. Architect, Frank W. Lockwood; General contractor, Algernon Blair, both of Montgomery. Sub-contractor for terrazzo, J. S. Fornara Tile & Terrazzo Co., Atlanta, Ga.

FOR 24 COLOR SPECIMENS OF FINE TERRAZZO, SEE PRECEDING PAGES

THE STRUCTURAL SLATE COMPANY

PEN ARGYL, PENNSYLVANIA

BRANCH OFFICES

ATLANTA, GA., 213 Red Rock Building
BOSTON, MASS., 43 Prospect Street, Somerville, Mass.
BIRMINGHAM, ALA., Bankhead Hotel
BUFFALO, N. Y., 116 Hamilton Boulevard—Kenmore
CHICAGO, ILL., 737 North Michigan Avenue
CINCINNATI, OHIO, 3629 Idlewild Avenue
DALLAS, TEX., 3012 Douglas Avenue
DETROIT, MICH., 111 Gladstone
KANSAS CITY, MO., 1730 Grand Avenue
MINNEAPOLIS, MINN., 1822 Jefferson Street, N. E.
MEMPHIS, TENN., 215 Falls Building
NEW YORK, N. Y., 110 East 42nd Street, Room 701
PHILADELPHIA, PA., 244 North 10th Street
PITTSBURGH, PA., Room 207 Investment Building, Fourth Avenue
ST. LOUIS, MO., 715 Washington Avenue
WASHINGTON, D. C., 327 Bond Building

The natural characteristics of slate quarried in Lehigh and Northampton Counties, Pennsylvania, make it particularly adaptable to a wide variety of uses in building construction and for commercial and scientific purposes.

In order to develop the most efficient standards of production and installation the majority of quarries in this slate district co-operate through one organization—THE STRUCTURAL SLATE COMPANY.

Inspection and "Pyramid" Brand Trade-Mark

All slate produced is thoroughly inspected before shipment, and after approval, given to the name "Pyramid." This trade-mark is registered and can be relied upon as indicative of the best that can be produced through careful methods of quarrying and experienced workmanship.

Specifications need only call for "Pyramid" brand structural slate to insure unusual excellence of product and service.

Engineering and Service Department

The Company has a complete Service Department supervised by specialists in the quarrying and utilization of slate who will be glad to co-operate with architects and engineers in the study of particular problems.

The Company has also published a series of volumes on all phases of the use and installations of slate as well as recommended standards. These may be obtained by addressing the Company.

CHARACTERISTICS, GRADING, SURFACES AND FINISHES

Structural Characteristics

Among the chief characteristics of structural slate from the Pennsylvania quarries are its fine, even grain, its uniform color, and its cleavage or fissility, which allows it to be split into slabs of practically any thickness.

The results of tests show that slate is one of the least absorptive of Nature's products, having a mean absorption of only 174/1000 of 1% when immersed in water for 24 hours.

Slate is extremely tough and elastic, as manifested by its resistance to strain, shock, blows and the effect of settlement. Moreover, it will not contract or expand.

Further data in connection with the natural formation and quarrying of slate may be secured from Bulletin 586 of the U. S. Geological Survey.

Grading

Structural slate is produced in one quality only but is divided into two natural gradings known as "Clear Stock" and "Ribbon Stock."

About 80% of the natural slate has ribbon veinings which in no way affect its impermeability or strength. Ribbon stock is standard for structural and sanitary installations and will be furnished for such purposes unless clear stock is specified.

Color

The slate produced in the Pennsylvania district is the familiar "slate grey" color.

Finishes

Planed Surface—The marks of the planing machine are faintly indicated on this surface which is used on the under side of stair treads and wherever uniformity of finish is not essential.

Standard Sand Rubbed Finish—The result of rubbing the planed surface with sand and water on large metal disks. This finish is a smooth even surface having the faintest grain or stipple. Standard unless otherwise specified for toilet room partitions, lavatory stalls, urinals, etc.

Honed Finish—Much smoother than sand rubbed this is the nearest approach to actual polish which can be given slate. It is not suitable for surfaces subject to constant abrasion but is desirable on vertically erected slate and residential building where the extra expense of about ten cents per square foot is justified.

Slate for Every Building Purpose

Formed by Nature, this strong, tough rock combines strength, non-absorption, non-contraction, non-expansion and endurance with economy, efficiency and attractiveness of appearance. This combination of values is responsible for the increasing use of slate for a wide range of appropriate effects in interior and exterior utilization.

Toilet and shower room partitions and wainscoting, floors, treads, base, sills, spandrels, coping, table tops, etc., are but a few of the many uses popular for modern construction.

Struco Slate

Struco Slate is natural slate rock finished with a special nitrocellulose lacquer which gives the hardest and most durable surface of any finishing material. This lacquer, adopted only after years of research, is made up of special materials which now constitute the standard formula for Struco.

The lacquer finish is chemically inert, will not deteriorate with age and with normal care will retain its beauty indefinitely. A special chapter, printed in full color illustrating various types of installations in Struco will be gladly sent on request.

Slate for Roofs, Floors and Walks

(Plain or Variegated Colors)

For years this Company has furnished the finest grade of slate for structural purposes. Now the Company is able to offer certified, inspected and labeled roofing slate and carefully selected slate in a variety of colors for floors, walks and terraces.

We offer two selected types of floors, "Penn-Mont" Pocono and the "Penn-Mont" Shadowcleft. The latter is an irregular design and provides an artistic informal installation for exterior or interior use. The Pocono is a random rectangular floor embodying dignity and good taste and represents a popular choice for beauty and durability.

Chapters—covering diversified uses of Structural Slate, sent on request

VICKERY STONE COMPANY

Producers of "Vickstone" Natural Cleft Flagging

6115 Market Street, PHILADELPHIA, PA.

REPRESENTATIVES

ATLANTA, GA., Harry E. Lindley, Mortgage Guarantee Building
BOSTON, MASS., F. R. Hersey, 31 Channing St., Wollaston, Mass.
DETROIT, MICH., C. R. McClellan, 15330 Archdale St.
MINNEAPOLIS, MINN., Rubble Stone Co., 3611 W. Lake St.
ST. LOUIS, MO., Rock Hill Precast Concrete Corp., 1200 No. Rock Hill Rd.
CLEVELAND, OHIO, The Interior Marble & Tile Co., 4404 Euclid Ave.
NEW ORLEANS, LA., C. A. King, Masonic Temple Building
PITTSBURGH, PA., S. A. White, 4609 Bayard St.
ROCHESTER, N. Y., American Clay & Cement Corp., 1175 E. Main St.
INDIANAPOLIS, IND., Edw. F. Dux Stone Co., 916 E. Michigan St.

Description

"Vickstone" is an exceedingly hard, strong, durable, silicious stone, which is found in natural layers, or ledges, varying in thickness from ½ to 8 in. The uniform, fine-grained quartz particles of this stone are closely and permanently cemented together, making the stone practically non-absorbent and highly resistant to wear.

Color Range

The natural basic colors of *"Vickstone"* flagging are Blue, Buff, Grey and Purple. These colors are soft and warm-toned — not flashy — and blend harmoniously with each other and with architectural and natural surroundings. In addition to these basic colors, there are many "surface" variations, such as Rusties, Gunmetals, Rustic-browns, etc., mostly found on the faces of stone 1 in. or less in thickness.

Texture

The natural cleft faces of *"Vickstone"* flagging compare with a smoothly "split" surface, there being just enough irregularity to give the stone a charmingly informal texture and assure a positive non-slip walking surface, dry or wet.

Adaptability

"Vickstone" flagging is a practical, economical and architecturally beautiful material for walks, curbs, stepping stones, step treads, risers, platforms, copings, interior and exterior floors, terrace paving, door and window sills, chimney caps, etc.

Reference Installations

Fordham University, New York, N. Y.
Franklin Park, Washington, D. C.
Firestone Estate, Akron, Ohio
Hunter College, New York, N. Y.
Stranahan Estate, Toledo, Ohio
Kennedy Residence, Ann Arbor, Mich.
Rawlins Park, Washington, D. C.
Reigel Estate, Wilmington, Del.

Other "Vickstone" Products

Granite—Grey, Pink, Black.
Sandstone—Buff, Grey, Variegated.
Bluestone—Penn. and Ohio.
Greenstone—Genuine natural color.
Limestone—Buff, Grey, Variegated.

Sizes

Rectangular units run from 2 to 16 sq. ft. in area; average 5 sq. ft. Irregular units average 2 sq. ft. Larger rectangular units are obtainable, but more costly. Treads can be furnished in one piece up to 6 ft. long. Copings, borders, etc., should be specified in random lengths, 2 ft. 6 in. to 4 ft.

Thickness

Where flagging is to be laid directly on earth and for treads, copings, exposed borders, etc., stone should be 1½ or 2 in. thick. If laid on concrete base, 1 in. average thickness is recommended. Being a natural cleft material an allowance of ¼ in. over or under specified thickness must be allowed.

Finish of Edges

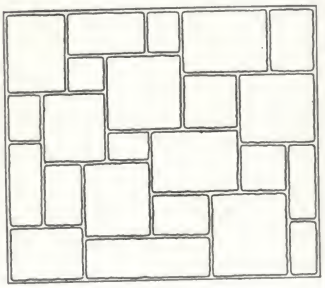
Exposed edges of treads, copings, borders, etc., should be specified as "snapped," meaning broken straight and square without tool marks; "quarry-cut" meaning roughly chisel dressed; "axed" meaning finely dressed. Snapped is least expensive and more popular, as an edge without tool marks is more in keeping with the informal natural cleft surface of the flagging.

General Information

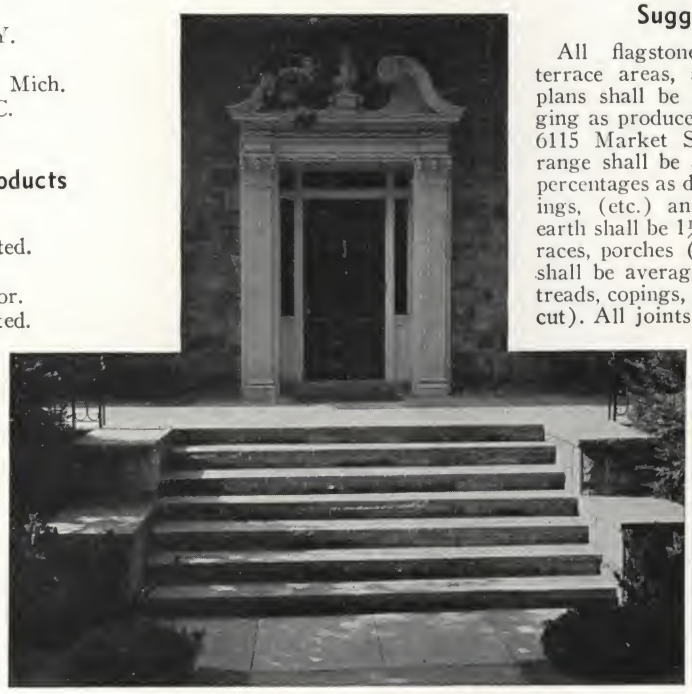
"Vickstone" flagging is produced in 20 quarries located along the famous Lackawanna Trail in Susquehanna County, Pa., the district long recognized as producing the soundest, smoothest, finest grain, widest color range of any flagging available. Facilities are such that prompt shipment by freight or truck can be guaranteed, and an efficient corps of experienced draftsmen and cutters assures expert workmanship on "cut" orders. Samples and estimates will be promptly furnished on request.

Suggested Specifications

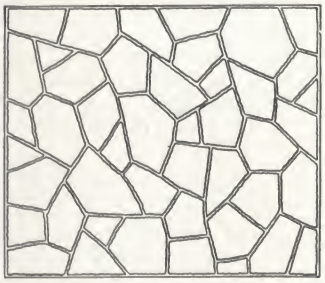
All flagstone for walks, steps, copings, terrace areas, and elsewhere as indicated on plans shall be *"Vickstone"* natural cleft flagging as produced by VICKERY STONE COMPANY, 6115 Market Street, Philadelphia, Pa. Color range shall be as per approved samples and in percentages as desired by architect. All steps copings, (etc.) and paved areas laid directly on earth shall be 1½ in. thick (2 in.); fields of terraces, porches (etc.), laid on concrete sub-base, shall be average 1 in. thick. Exposed edges of treads, copings, (etc.) shall be snapped, (quarry-cut). All joints shall average ¾ in. in width.



Random Rectangular Paving Design



Vickstone Treads, Risers, Coping and Paving



Random Irregular Paving Design

LIBBEY·OWENS·FORD GLASS COMPANY

TOLEDO, OHIO

FOR COMPLETE DESCRIPTION AND DETAILS, SEE FILE INDEX

VITROLITE

COLORFUL STRUCTURAL GLASS

Vitrolite Lobby in Bell Building, Toledo, Ohio
MILLS, RHINES, BELLMAN & NORDHOFF, INC., Architects

Vitrolite Toilet in Nicholas Building, Toledo, Ohio
WALKER & WEEKS, Architects

Vitrolite Bathroom in Cambridge, Mass.
LITTLE & BROWNE, Architects

Corner of Vitrolite Kitchen in Philadelphia Home

Vitrolite is an opaque Structural Glass fused at high temperature. It has a high tensile strength and unusual resistance to wear. Comes in a rich variety of plain and agate colors. Vitrolite has a high lustre. Will not warp, swell or craze. It is non-absorbent, highly resistant to staining and to burns from cigarettes. Cannot peel, rot or rust. Soap and water will keep it like new for years.

Colorful Vitrolite is in wide use for store, theatre and building fronts of every kind; for lobbies, corridors, washrooms, toilet rooms, shower rooms; for modern walls and wainscoting—also counters, bars, soda fountains and table tops in lunch rooms, restaurants and refreshment places; for interiors of modern markets and stores of every type. In homes, Vitrolite is becoming increasingly popular for complete walls and wainscoting in kitchens and bathrooms.

For complete information refer to the L·O·F Catalog, File Index

Vitrolite Front of Eglinton Theatre, Toronto, Ont., Canada
KAPLAN & SPRACHMAN, Architects

PITTSBURGH CORNING CORPORATION

Grant Building

PITTSBURGH, PA.

Carrara Structural Glass is distributed by the Pittsburgh Plate Glass Company and by W. P. Fuller & Co. on the Pacific Coast

For list of Branches and Map, see File Index for Pittsburgh Plate Glass Company General Glass Catalog

CARRARA STRUCTURAL GLASS

Beautiful, Practical and Versatile Material for Modern Design and Decoration

The Product

Carrara Structural Glass is a material which successfully combines beauty, versatility, sanitation, permanence and reasonable cost. It is a glass whose surface is mechanically ground and polished. During manufacture, grinding wheels remove the crude, or fire finish, leaving a homogeneous, uniform structure. The surface thus exposed is then polished, by essentially the same methods as those employed in the manufacture of the finest polished plate glass. This grinding and polishing results in a smooth, mirror-like surface, accurately reflective.

Carrara brings to the architect soft color tones that are mellow, distinctive and designed to harmonize with any color scheme. (See color chips on page 5.) Carrara is strong and durable, made to withstand rigorous use both indoors and out. It will not absorb odors of any kind. It is impervious to grease, grime, moisture, chemicals, and pencil marks. It can be easily cleaned by an occasional wiping with a damp cloth. It retains its brilliant luster and perfect mirror-like reflective qualities year after year. It is easy to install. And it is adaptable to so many different kinds of treatment that it offers the architect unlimited opportunities for design.

Structure

Uniform, homogeneous, closeknit, vitrified.

Decoration

Carrara can be beautifully decorated to suit individual tastes. It can be shaded or fluted. It can be sand-blasted with any design desired, bringing the pattern out either in shallow or deep relief. These designs may be further enriched by the application of gold, silver or colors.

Laminated Carrara

Carrara can be laminated by heat and pressure at the factory, assuring a permanent joint, and this laminated Carrara is then handled and set like a single slab. The laminated slab forms the finest type of toilet partitions. By lamination, many original effects may be obtained, such as the combination of two different colors, the building up of Carrara pilasters with reveals and offsets, etc.

Installation

Carrara is easy to install. It is handled similarly to marble. To insure installations being made according to our standards, we maintain our own crews of workmen.

Carrara may be installed over any hard, firm wall surface, but *an allowance should be made for a space of* $\frac{3}{8}$ *in. behind the glass for setting.*

Carrara is installed by means of a plastic cement, which bonds permanently with the glass and the wall—yet allows for settling, shrinkage and expansion.

We provide all hardware necessary for the erection of our material, and will have the slabs drilled for any hardware or fixtures which we do not supply, such as hinges, strikes, etc., provided we are furnished their location and dimensions, so that the drilling may be done at the factory.

Suggested Specifications

This contractor is to furnish all labor, material and service necessary for properly installing all Structural Glass as indicated on the drawings.

Contractor shall verify all dimensions at building, prepare shop drawings and furnish the architect with three sets of prints for approval. Doors, equipment and all hardware not necessary for erection of Structural Glass will be furnished and installed by other contractors. Other contractors will prepare walls, furnish and set wood grounds—also wood blocks for fixtures.

All Structural Glass shall be Carrara as made by the PITTSBURGH PLATE GLASS COMPANY of size and thickness indicated on the drawings. Finish of face side and all exposed edges to be polished.

The polished finish will be obtained by grinding the surface until a true plane is produced and then mechanically polishing it to a high luster. Installation will be made according to the manufacturers' recommendations and to the satisfaction of the architect. This contractor, before setting Structural Glass, shall size the rough wall with an approved type of bond coat.

Mastic cement used, shall be of a type tested and approved by the Structural Glass manufacturer.

All pieces shall be set plumb and true and with even flush joints which shall be filled with an approved type of pointing compound.

This contractor shall do all cutting and drilling of Carrara for other contractors provided they furnish him with accurate layouts so that it may be done at the factory.

At the completion of his work, this contractor shall remove all rubbish, clean the Carrara and leave it in satisfactory condition.

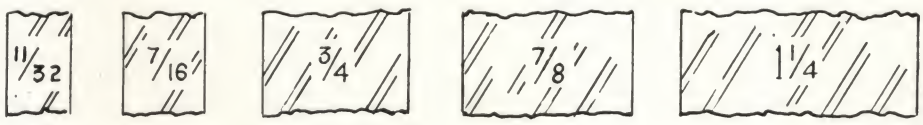
Used with Pittco Metal in Store Fronts

Carrara Structural Glass has been widely used for the construction of modern store fronts, in connection with Pittco Store Front Metal. For information and details of use with Pittco Metal, see Pittsburgh Plate Glass Store Front Catalog in Sweet's File Index.

Physical Characteristics

Qualities	Thickness	Maximum sizes	Weight	Strength	Colors	Finish
"Perfected" only	Black, White, Jade, Grey, Ivory, 11/32"; 7/16"; 3/4"; 7/8"; 1 1/4" (Black also available 1/4") Beige, Forest Green—11/32" only. Wine, Orange, Rembrandt Blue—7/16" only. See page 5 for colors supplied in various thicknesses	Largest manufactured size 72"x130" Largest recommended size for exterior use —10 sq. ft.—for use above 2nd story height 6 sq. ft.	1/4"— 3.29 lb. sq. ft. 11/32"— 4.5 lb. sq. ft. 7/16"— 5.76 lb. sq. ft. 3/4"— 9.87 lb. sq. ft. 7/8"—11.51 lb. sq. ft. 1 1/4"—16.45 lb. sq. ft.	As great or greater than materials commonly used for same purpose	Standard: Black, White, Jade, Ivory, Grey, Beige, Forest Green Trim: Wine, Orange, Rembrandt Blue	Mechanically ground and polished to a plate glass surface

Thickness
(Actual size)



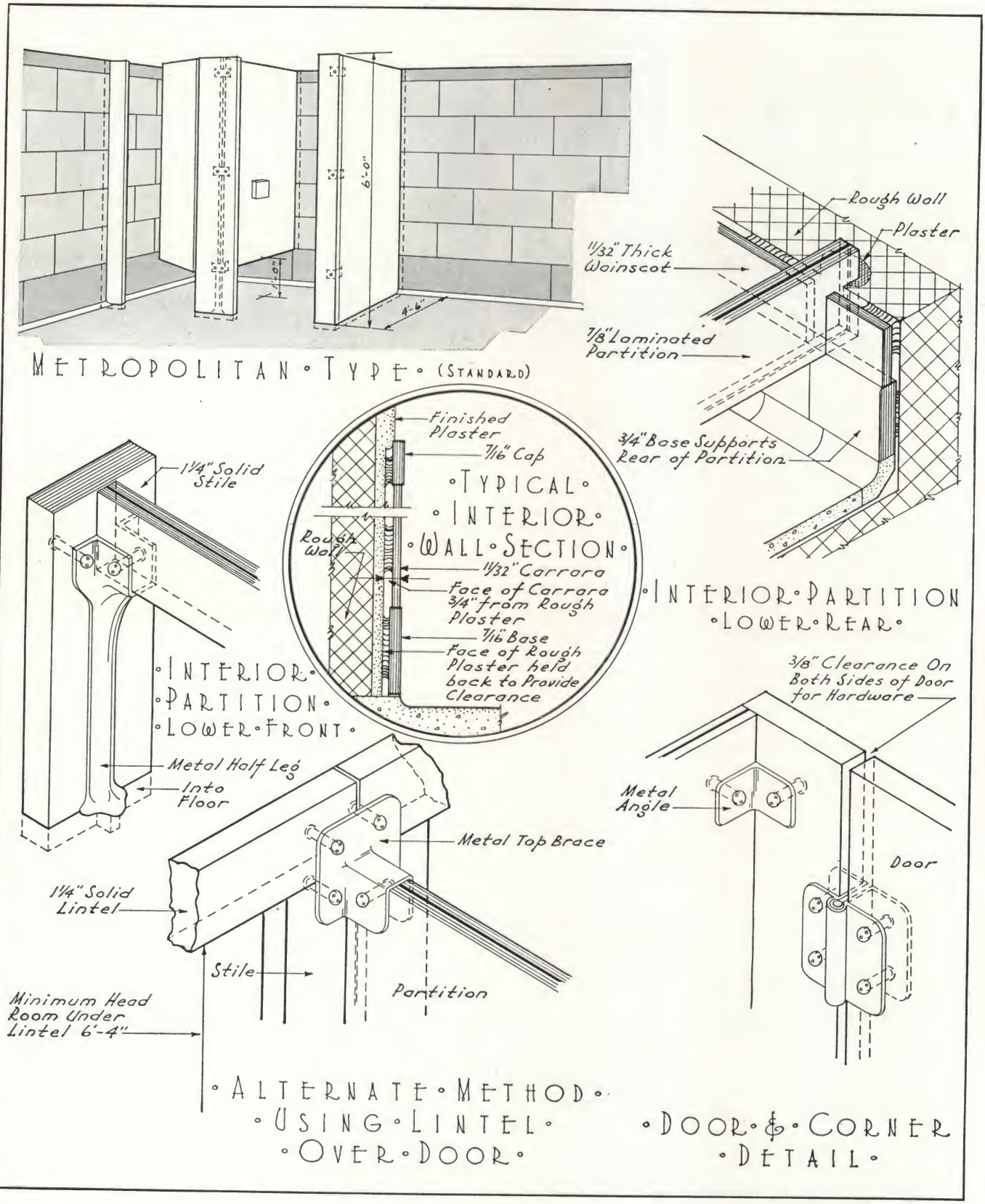
Type and Thickness of Carrara Recommended for Various Members

Ceiling	11/32 in.	Partitions	7/8 in.
Wainscot, Ashlar	11/32 in.	Door and Window Trim	7/8 in.
*Cap	3/4 or 7/16 in.	Deal Plates	7/8 in.
*Base	3/4 or 7/16 in.	Counter Tops	1 1/4 in.
Store Fronts	7/16 in.	Lintel	1 1/4 in.
*Wainscot, Panel	3/4 or 7/16 in.	Stiles	1 1/4 in.
Bulkheads	7/16 in.	Shower Seat	1 1/4 in.

*Where two thicknesses are mentioned, size of unit is determining factor.

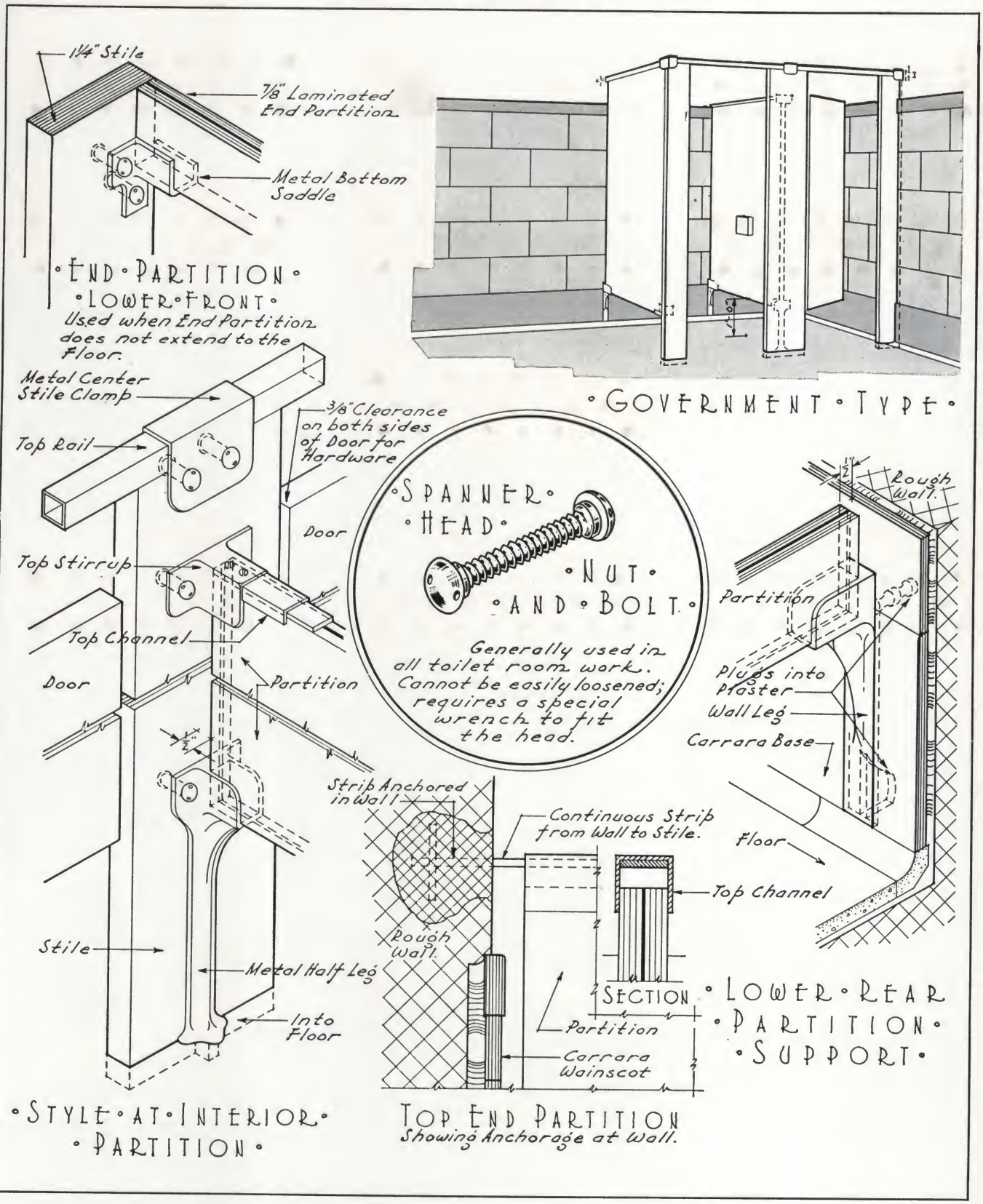
PITTSBURGH CORNING CORPORATION

Toilet Room Compartment Details



The usual or Metropolitan type of toilet compartment construction is illustrated at the left, though it is possible to modify it by use of a lintel as shown in the detail at the lower left corner of the page. Rigidity of construction is obtained by letting the stiles and partitions enter the floor and wall at least ¾" where they are held straight and true with a bond of Plaster-of-Paris. In addition to *ashlar* patterns, Carrara may be laid up in large slabs or other construction.

CARRARA Modern Structural Glass



In the Government type of toilet compartment, partitions are full-floating. This produces a stress-free construction which compensates for any settlement of the building itself. The weight of all interior partitions is supported on metal legs at front and back, while the end partition is supported on a metal leg at the rear, and the front on a metal saddle fastened to the stile. All stiles extend through the finished floor, resting on the rough slab. The use of the metal lintels and the channels over partition tops act as braces that assure a trouble-free installation.

Seven Standard Colors of CARRARA Structural Glass

BLACK ¼", 11/32", 7/16", ¾", ⅞", 1¼"

JADE 11/32", 7/16", ¾", ⅞", 1¼"

GREY 11/32", 7/16", ¾", ⅞", 1¼"

IVORY 11/32", 7/16", ¾", ⅞", 1¼"

FOREST GREEN 11/32" Only

BEIGE 11/32" Only

Three Trim Colors of CARRARA Structural Glass

WINE 7/16" Only

ORANGE 7/16" Only

REMBRANDT BLUE 7/16" Only

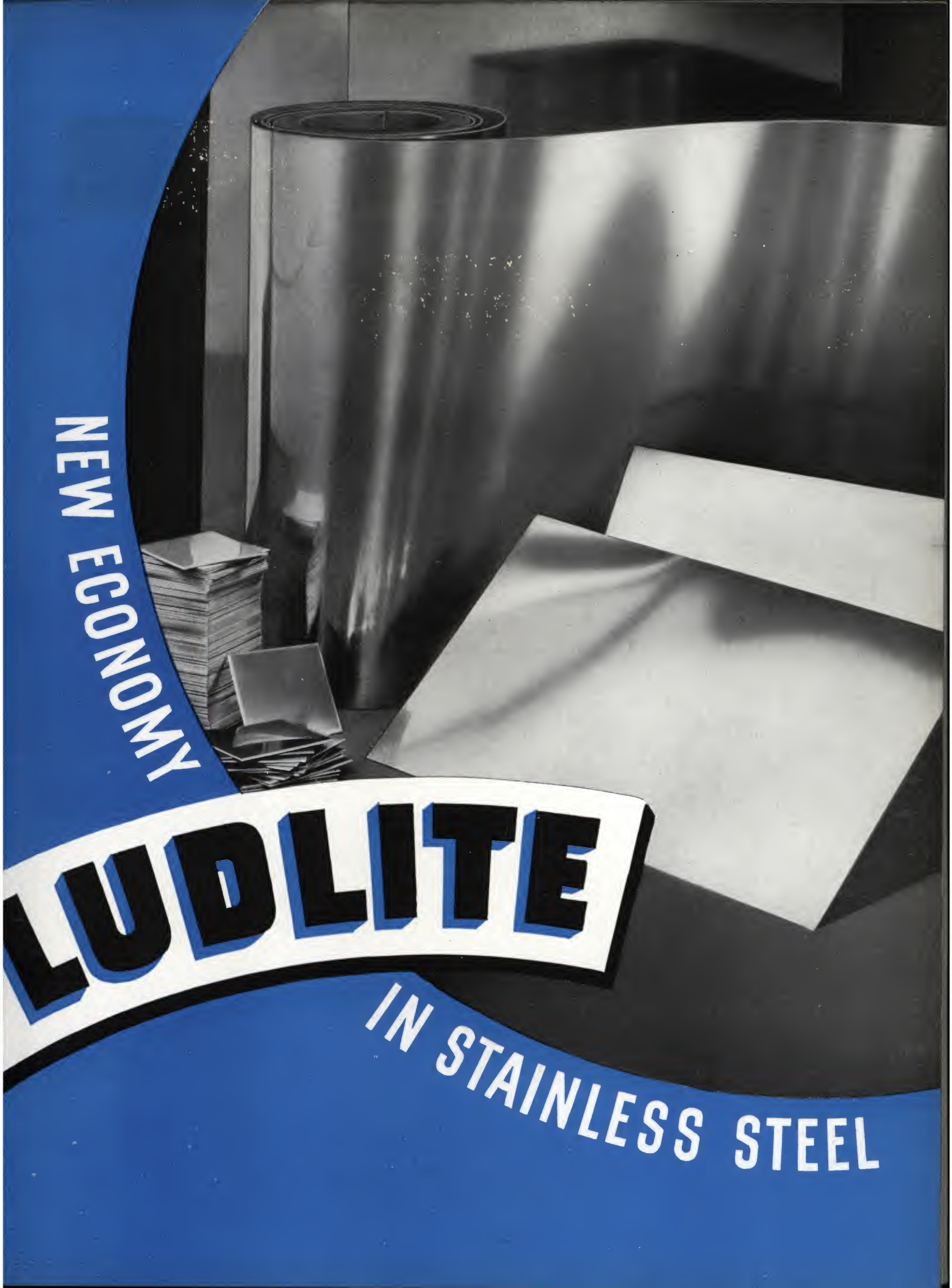
A Few of the Architects Who Have Specified Carrara Toilet Rooms in Two or More Buildings

Architect	Building
Cass Gilbert	Woolworth Bldg.
Cass Gilbert	Union Central Life Bldg.
Cass Gilbert	Detroit Public Library
Cass Gilbert	Prudential Bldg.
Cass Gilbert	New York Life Bldg.
Cass Gilbert	U. S. Chamber of Commerce
Cass Gilbert	U. S. Court House, N. Y. C.
Cass Gilbert	U. S. Supreme Court
Cass Gilbert	U. S. Legation Bldg.
Cass Gilbert	Roosevelt Memorial
John Russell Pope	U. S. Archives Bldg.
John Russell Pope	Board of Trade
Holabird & Root	Palmer House
Holabird & Root	Ambassador Hotel Annex
Warren & Wetmore	Grand Central Terminal
Warren & Wetmore	N. Y. Central Bldg.
Warren & Wetmore	Commodore Hotel
Warren & Wetmore	First National Bank
York & Sawyer	Bowery Bank
York & Sawyer	Salmon Tower
York & Sawyer	R. I. Hospital Trust Co.
York & Sawyer	N. Y. Academy of Medicine
York & Sawyer	Union League Club
York & Sawyer	500 Fifth Avenue Bldg.
Shreve, Lamb & Harmon	Insurance Co. of N. America
Shreve, Lamb & Harmon	Albee Theatre
Thomas W. Lamb	Capitol Theatre
Thomas W. Lamb	Cadillac Administration Bldg.
Albert Kahn, Inc.	Fisher Garage Bldg.
Albert Kahn, Inc.	Nurses' Home & Ford Hospital
Albert Kahn, Inc.	S. S. Kresge Administration Bldg.
J. E. R. Carpenter	Lincoln Bldg.
J. E. R. Carpenter	515 Madison Avenue
McKim, Mead & White	University Club, N. Y. C.
McKim, Mead & White	P.R.R. Station, Newark
Graham, Anderson, Probst & White	P.R.R. Station, Philadelphia
Graham, Anderson, Probst & White	Marshall Field Bldg.
Trowbridge & Livingston	J. P. Morgan & Co. Bldg.
Trowbridge & Livingston	Mellon Bank, Pittsburgh
E. P. Mellon	Mercantile Bldg.
Sugarman & Berger	The New Yorker
Sugarman & Berger	N. Y. Trust Company
Cross & Cross	Stone & Webster Bldg.
Cross & Cross	75 Federal Street, Boston
Thomas M. James Co.	Federal Land Bank
Thomas M. James Co.	Hospital
War Department	Hospital
War Department	Union Station, Cincinnati
Felheimer & Wagner	Erie Passenger Station
Felheimer & Wagner	N. Y. Central Station, Buffalo
Felheimer & Wagner	State Washington Bldg.
W. W. Ahlschlager	Roxy Theatre
W. W. Ahlschlager	Tribune Tower
John M. Howells and Raymond M. Hood	Daily News
Howells & Hood and Lockwood, Greene Eng., Inc.	Mellon Inst. of Ind. Research
Janssen & Cocken	Kaufmann's Department Store
Janssen & Cocken	

A Few Notable Buildings with Complete Toilet Room Installations of Carrara

Building	Architect
State Office Bldg.	Gehron & Ross
Bank of Manhattan	H. Craig Severance, Inc. Yasuo Matsui Associate
Butterick Bldg.	Russell G. Cory
Chanin Tower	Sloan & Robertson
Squibb Bldg.	Buchman & Kahn
Columbia University Library	James Gamble Rogers
New York Times Annex	Ely Jacques Kahn
Union Club	Delano & Aldrich
Waldorf Astoria Hotel	Schultz & Weaver
Penn Mutual Life Ins. Bldg.	John T. Windrim
Grant Bldg.	H. Hornbostel, Eric Fisher Wood & Co., Associate
Rockefeller Center, New York	Reinhard & Hofmeister, Corbett, Harrison & McMurray, Hood & Foulhioux
U. S. Department of Justice	Zantzinger & Borie

Many United States Government buildings not mentioned above also include Carrara toilet room installations.


NEW ECONOMY
LUDLITE
IN STAINLESS STEEL

MORE FLEXIBLE

Allegheny Stainless Steel
LUDLITE
TRADE MARK REG. U.S. PAT. OFF.
PATENTS PENDING
ALLEGHENY LUDLUM STEEL CORP.

MORE VERSATILE

What Ludlite Is

Ludlite is a composite material. Its outer surface is a thin sheet of strong, light stainless steel. Its inner surface is a tough, waterproof, flexible backing of non-metallic material. By a special manufacturing process, the stainless steel and the flexible backing are permanently combined under heat and pressure.

The backing affords desirable support to the steel and makes it possible to apply Ludlite to plaster, wood, fiber-board, concrete, and other surfaces. By this means, light gauge stainless steel can now be used, and extreme flexibility and ease of application result. A further important feature of Ludlite is the fact that the composite backing deadens sound. The result is a minimum of noise wherever Ludlite is used.

Special Ludlite Adhesive for use in applying Ludlite has been developed, and may be had wherever Ludlite is sold. Attractive moldings of stainless steel for finishing edges and joints are also available in all needed shapes and styles. Ludlite in ribbon form for trim, is described on the opposite page.

Ludlite—A New Stainless Steel Material

Stainless steel, infant prodigy of the steel industry, again broadens its service to the entire building field with the introduction of Ludlite. Supplementing forms previously available, Ludlite introduces new ease of application and new low cost. It makes possible the specification and use of stainless steel for a wide range of new and interesting applications.

Allegheny Ludlum Steel Corp., sponsor and producer of the world-famous Allegheny Metal, presents Ludlite to the architect and builder as a valuable addition to its complete line of stainless steel sheets, strip, bars, and wire.

The myriad opportunities for the use of Ludlite appeal to all who have investigated this important new material.

Ludlite Lowers Installation Costs

While the advantages offered by stainless steel have long been recognized by architects and builders, cost of installation has to some extent limited its use. The very advantages of extreme strength, toughness, and resistance to wear and corrosion which make stainless steel so desirable have also made it more expensive to fabricate and install. Consequently, it has been necessary to forego the use of stainless for many applications where it would otherwise have been logical.

Ludlite does much to solve this problem. It can be used to cover a wide variety of wall and working surfaces at comparatively low cost. Simplicity and ease of application likewise open many new and valuable decorative uses.

Ludlite Is Readily Formed and Applied

The outstanding feature of this new material is the facility with which it can be installed. Instead of requiring prefabrication in a specially equipped metal working shop, Ludlite can be cut right on the job with ordinary heavy scissors, tin snips, or a fine toothed saw, and can easily and quickly be formed and fitted as the work progresses. It can be nailed, screwed, or fastened in place with special Ludlite Adhesive. It can readily be applied to any smooth or curved surface, and may easily be bent around corners. It is a simple matter for a carpenter or craftsman, with the few necessary tools, to apply Ludlite anywhere.

Simple directions for cutting, applying, and finishing Ludlite are furnished with every shipment. These instructions are easy to follow. They are in themselves convincing proof that Ludlite is a most convenient and practical architectural material.

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QUICKLY APPLIED

Allegheny Stainless Steel
LUDLITE
TRADE MARK REG. U.S. PAT. OFF.
PATENTS PENDING
ALLEGHENY LUDLUM STEEL CORP.

NEW LOW COST

Available in the Following Forms

Ludlite in Roll Form

Ludlite is sold in flexible rolls two feet wide and fifty feet long, from which any length may be supplied. It cuts like tin, bends like copper, cements in place like linoleum, but it's stainless steel.

In addition to long life, perfect sanitation, and ease of cleaning, Ludlite's satin sheen and color reflecting properties create unusual decorative possibilities (see illustration on back cover).

Ludlite (pebbled finish) in Roll Form

Pebbled Ludlite is sold in flexible rolls two feet wide and fifty feet long. The entire surface is pebbled into a serviceable ripple facing. This type of Ludlite is slightly stiffer and is highly resistant to denting and defacement. It is ideal for table tops, counters, sinks, or for any surface subject to continuous hard usage. A damp cloth keeps it always bright and new.

Pebbled Ludlite harmonizes with any decorative scheme; it reflects and blends surrounding colors and gives many novel and interesting effects.

Ludlite in Square Tiles

Ludlite tiles are individual pieces four inches square, easily applied to any surface. They are rolled at the edges to give an appearance of thickness and solidity, and to assure an attractive and perfect fit when applied.

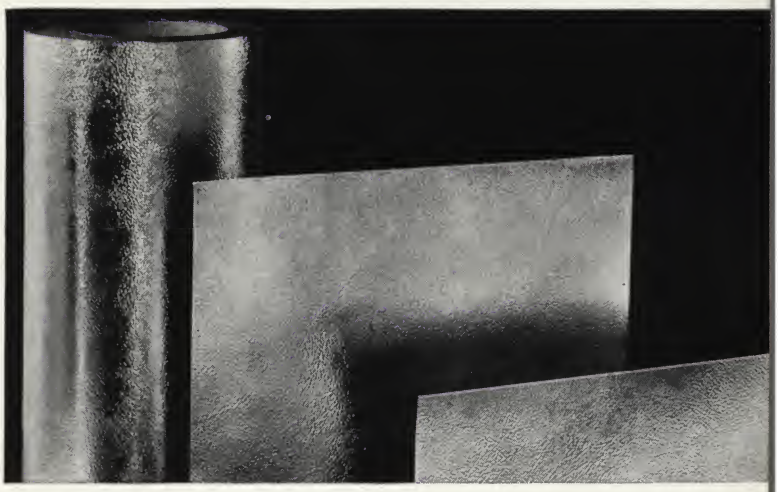
In addition to many advantageous uses in new construction, Ludlite tiles are extremely valuable for modernization work. Where conditions might cause more brittle materials to split or crack, Ludlite tile offers the necessary toughness and "give." Water-tight and permanent surfaces of lasting beauty are thus assured.

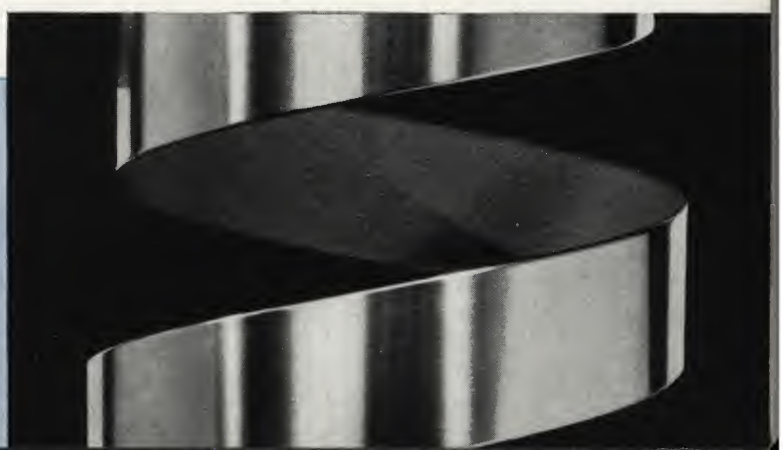
Ludlite in Ribbon Form

Ludlite Ribbon is useful as a decorative medium because of its beauty, low cost, and ready, permanent adhesion to virtually any smooth surface. It may be bent around corners or applied to practically any convex or concave surface.

Ribbon is available in strips from one inch wide up by half-inch stages. Its rolled edges give it an appearance of depth and solidity, and offer an attractive and serviceable means for covering joints in Ludlite as well as in other decorative and structural materials.

As a trim for store fronts, show windows, signs, elevator cars, doors, walls, and the like, Ludlite Ribbon is ideal.





A Complete Stainless Steel Service

While this catalog is devoted exclusively to presenting Ludlite as a new development, may we remind readers that Allegheny Ludlum Steel Corp. offers a complete service in all grades and forms of stainless steel for building and industrial use. Special catalogs and technical literature covering world-famous Allegheny Metal and other Allegheny stainless steels are available on request. Address Allegheny Ludlum Steel Corp., Oliver Building, Pittsburgh, Pa.

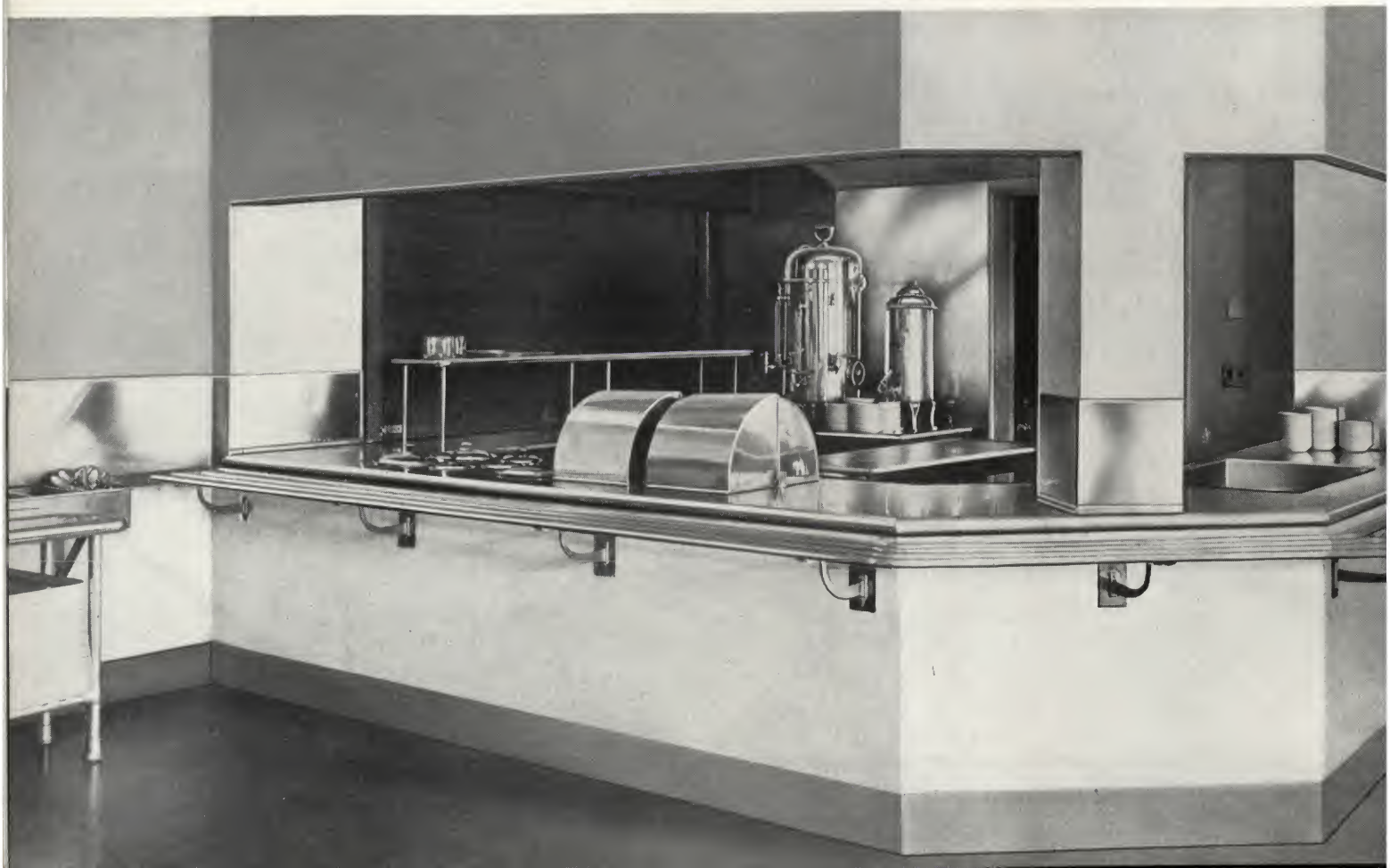
NEW BEAUTY AND LASTING ECONOMY

These pages illustrate a few recent Ludlite applications. Ludlite cuts modernization costs and provides lasting beauty and economy. It can now be used liberally in stores, restaurants, hotels, service stations, offices, institutions, and throughout industry.

Wherever highly sanitary conditions and protection from rust, stain, abrasion, and chemical attack or corrosion are

Ludlite Beautifies Modern Restaurant and Store Fronts

Attractive Store Sign Showing Effective Use of Ludlite on Curved Surfaces



Modern Hospital Food Service Protected by Sanitary Ludlite

N EVERY LUDLITE INSTALLATION

required, Ludlite offers many logical applications. It is effective in the food industries for table tops, benches, chutes, hoods, floor trucks, and for resistance to the action of fumes. In the textile industry, its clean, smooth, rustless surface is desirable for use wherever goods are handled. In many other commercial, institutional and industrial fields executives are discovering further applications for Ludlite which effect substantial economies in equipment and afford new insurance against damage to products handled.

A Lunch Counter Modernized With Ludlite

Gasoline Station Rest Room Finished With Sanitary Ludlite Tile

Ludlite Assures Cleanliness in This Restaurant Kitchen

Ludlite Insures Cleanliness in This Hospital Kitchen

LUDLITE—A NEW MEDIUM

Ludlite offers architects, designers and decorators an attractive, versatile new medium. The decorative effects possible with Ludlite, alone, or in combination with colored materials are unlimited, as illustrated on the back cover of this catalog.

Homes everywhere are being inexpensively modernized with Ludlite. This new form of stainless steel is replacing other materials as shelf covering; drain boards, splash backs,

Design For Corner of Modern Bar and Game Room with Ludlite Covered Bar and Trim

A Serviceable and Attractive Table Top of Pebbled Ludlite

Many Interesting Fireplace Treatments Are Possible With Ludlite

Ludlite Adds To The Cleanliness of This Cafeteria Kitchen

FOR CREATIVE DESIGN

kitchen and bathroom walls gleam with permanent Ludlite. Bins and boxes are being lined with it. Door push plates, fireplace screens, trays, and wainscoting are taking on new luster that will last indefinitely. Ludlite has some place in every room.

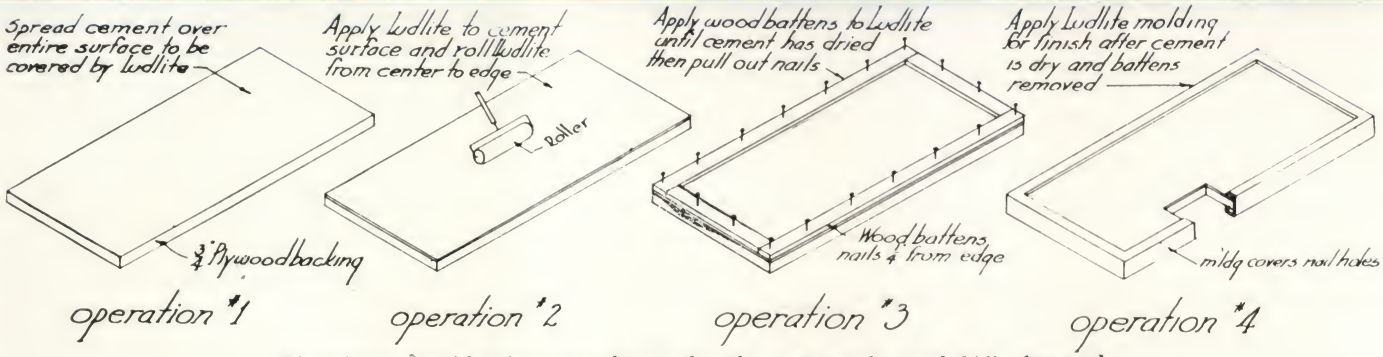
Housewives like Ludlite because it is better looking, does not rust or corrode, and can be kept bright and clean with a damp cloth.

Sketch Showing Some of Ludlite's Possibilities For the Modern Kitchen

Ludlite Offers Wide Scope in Bathroom Design and Decoration

Immune to Dents or Scratches, Pebbled Ludlite is Ideal For Working Surfaces

METHOD OF APPLYING LUDLITE TO TABLE AND COUNTER TOPS



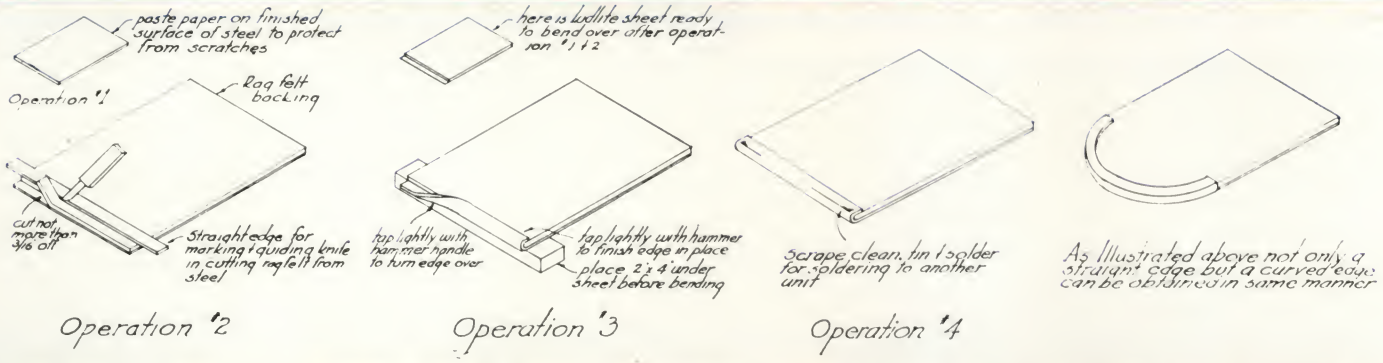
The above specifications are drawn for the commonly used ¾" plywood.

1—Cut and fit Ludlite to exact dimensions before applying adhesive.

2—If installation can be made quickly, battens may be eliminated by having molding mitered and pre-fitted, ready for immediate application. Otherwise, battens should be prepared in advance, applied as soon as Ludlite is in place and not disturbed for at least twelve hours.

Note: Although battening process is not absolutely essential, its specification wherever practicable is recommended.

METHOD OF MAKING FINISHED EDGE FOR SINK BASINS, CUTOUTS, ETC.



APPLYING LUDLITE TO FLUSH SINK BASIN WITH PRE-FITTED MOLDING

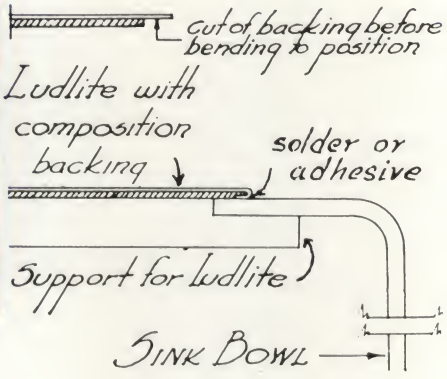
Moldings Mitered and Fitted in Advance

Adhesive Spread Quickly With Notched Trowel

Surface Rolled Evenly—Weighted

Edges Lagged at Once With Pre-Fitted Molding

Rolled Edge Assures Smooth, Water-Tight Joint



MANY STRIKING DESIGNS POSSIBLE

Many original designs and striking effects can be easily obtained by scoring, embossing or buffing Ludlite. No expensive preparatory work is necessary, and designers' instructions can be followed by the workman on the job.

Unusual effects, employing alternate designs, can be secured by scoring on both sides of the Ludlite before applying it. Moreover, many decorative designs can be applied to Ludlite after the material has been installed. As illustrated below, unique effects and finishes may be obtained by covering Ludlite with a cut-out masking paper or stencil and applying a buffer.

(A straight edge, a glass cutter and disc linoleum cutter are the only tools required for scoring Ludlite.)

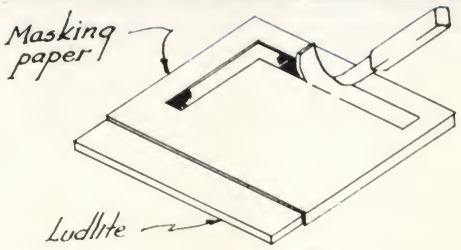
IMPORTANT NOTICE

This catalog describes Ludlite products available at time of going to press. However, important additions to the Ludlite line are being developed. We, therefore, request that architects or builders contemplating specification or purchase of Ludlite write for latest information.

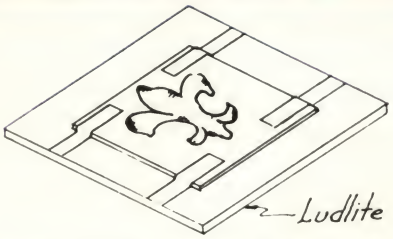
ALLEGHENY LUDLUM STEEL CORP.

Ludlite Division — Watervliet, N. Y.

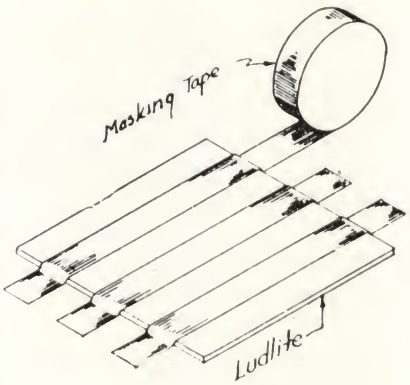
DECORATING LUDLITE AFTER INSTALLATION



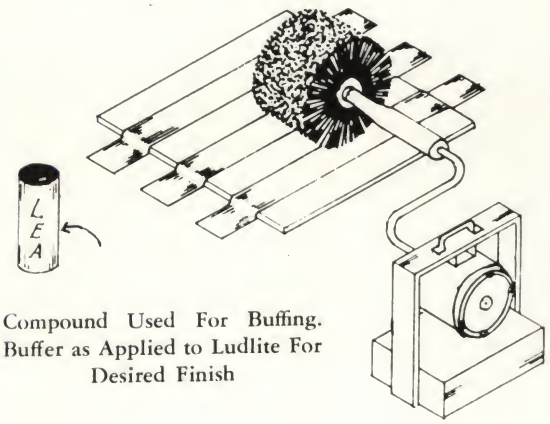
Sheet of Ludlite With Masking Paper Covering Surface. Cut Out Design With Sharp Knife and Apply Buffer For Finish



Sheet of Ludlite With a Paper Stencil Applied to Surface and Held in Position With Tape. Apply Buffer For Finish

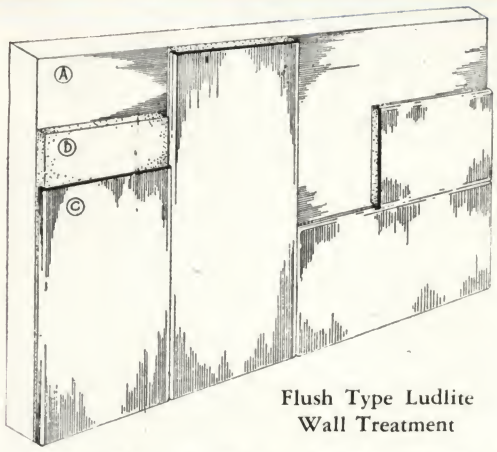


Sheet of Ludlite With Masking Tape Applied Before Buffer is Used For Variance in Finish



Compound Used For Buffing. Buffer as Applied to Ludlite For Desired Finish

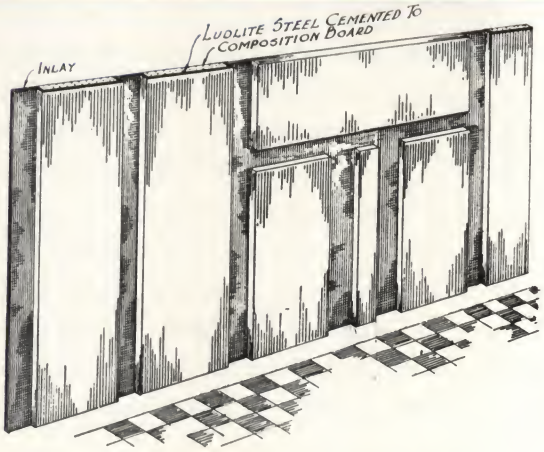
DECORATIVE LUDLITE WALL TREATMENTS



Flush Type Ludlite Wall Treatment

Many wall surfaces, although in good condition, have irregularities not apparent until covered with a closely adhering, highly finished material like Ludlite.

Special treatment is recommended where slight increase in application cost is permissible.



Using Ludlite in Full Width (24 Inches)

A—Sub-surface representing Old Wall, Rough Boarding, Plaster Brown Coat etc.

B—Smooth dense surfaced Wall Board, or preferably Mineral Fiber Board 1/4" thick, cut 23 1/2" wide, spaced full 1/8" apart and flush nailed for either horizontal or vertical treatment.

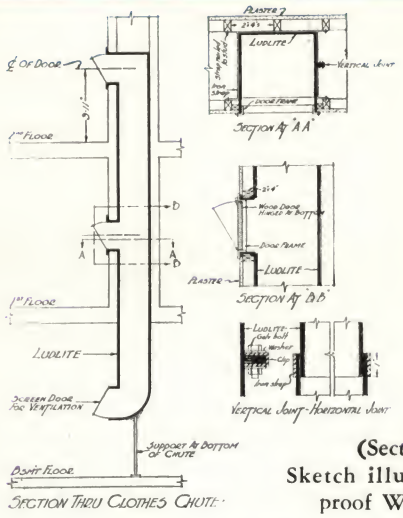
C—Ludlite with 1/4" brake flange cemented in place. Flange should be exactly a 90° bend.

Ludlite Wall Treatment With Color Inlay

Effective contrasts are obtained by spacing flush type Ludlite wall treatment with decorative inserts of a different thickness.

Suggested inlays are: colored plastic materials readily cut from sheet stock (these are specially recommended for exterior use), linoleum, rubber wall covering, enameled wall board, or strips of wood veneer. Inserts must be fitted and cemented in place after Ludlite installation is complete.

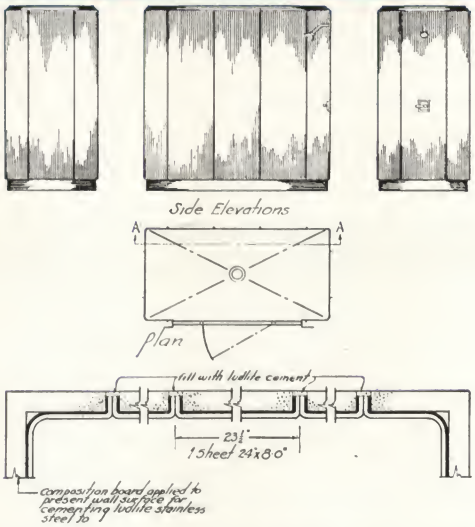
The treatment illustrated represents, of course, only the basic technique; infinite variations are possible.



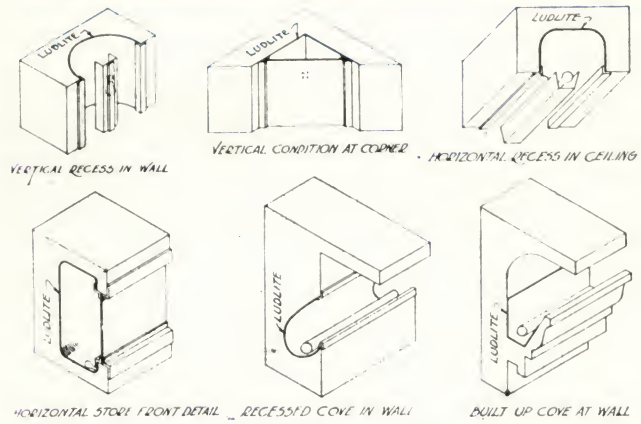
(Section A A)
Sketch illustrating Waterproof Wall Treatment of Ludlite

Joints may be made waterproof without the use of solder by allowing for 3/16" Ludlite flange when applying to 1/4" composition board. Fill 1/8" spaced slot with Ludlite Adhesive before applying Ludlite sheet.

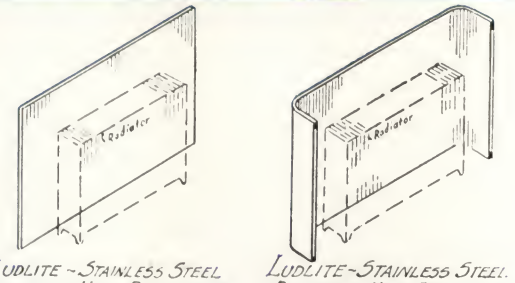
LUDLITE FOR CHUTE LINING



LUDLITE FOR SHOWER STALL LINING



LUDLITE FOR INDIRECT LIGHTING



Ludlite - Stainless Steel Radiator Heat Reflector Fastened To Wall

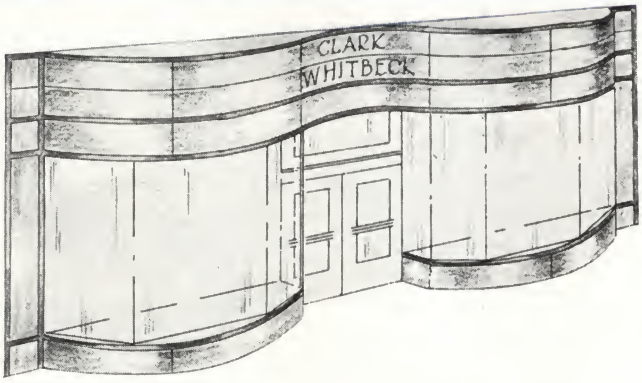
Ludlite - Stainless Steel Radiator Heat Reflector With Curved Ends

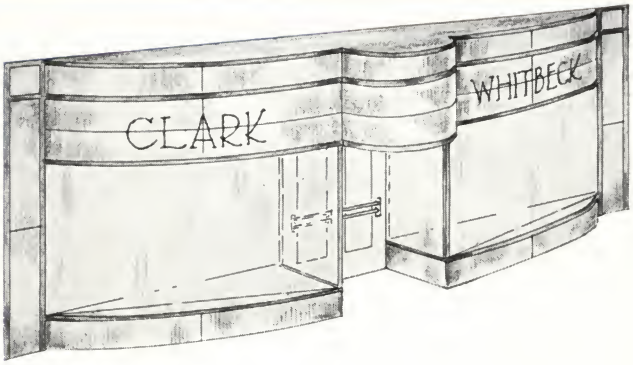
LUDLITE FOR RADIATOR RECESSES

The permanent bright luster of Ludlite affords an excellent reflector for radiant heat.

The efficiency of recessed radiators will be greatly increased by simple installations as indicated above.

LUDLITE FOR CURVED SURFACES





Ludlite affords a very striking and economical covering for curved surfaces. It is especially effective for use in modernizing store fronts and interiors.

1—For economy specify standard fittings.

2—Utilize the flexibility of Ludlite for originality.

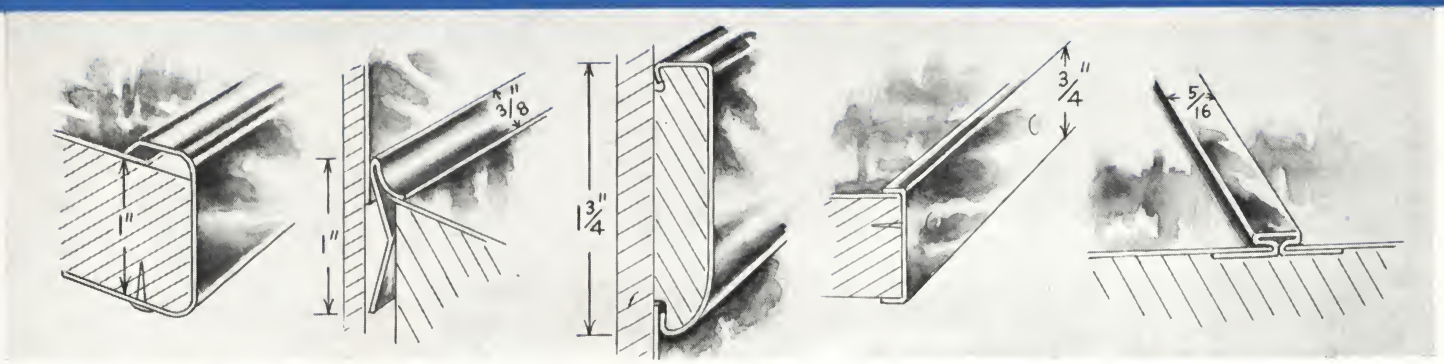
3—Irregularities occurring in curved sections of the sub-base are almost entirely overcome by exercising a little care in locking the ends of the Ludlite sheet.

4—In new construction formed galvanized sheet, plywood and fiber board provide a suitable sub-surface.

5—Do not roll the curved portion of Ludlite application — merely draw it tight around pre-cemented convex surface. In applying Ludlite to concave surface pre-shape Ludlite sheet to slightly sharper curve than described by sub-base. This will allow sufficient pressure to hold curved section in place until cement has set.

SAMPLES DISPLAYED WITH ARCHITECTS SAMPLES CORPORATION NEW YORK, N.Y.

STAINLESS STEEL MOLDINGS AVAILABLE FOR USE WITH LUDLITE



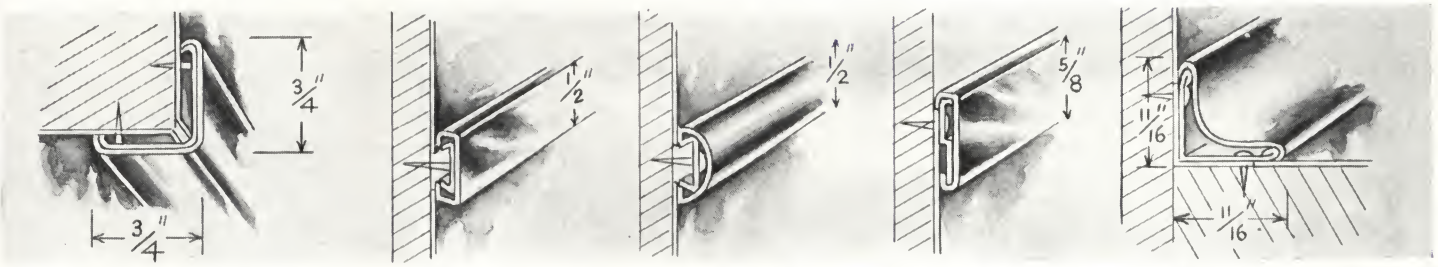
CE-1 Edge molding—for counters and cabinet tops—fastened by nails or screws through the bottom. Made for tops with over-all thickness of 1"

DC-2 Drain cove molding—for water-tight inside right angle joints between counter top and back splash

S-89 Wood core cap molding

J-75 Edge molding

1002 Division strip



10-OS Outside corner — snap-on molding

4-S Flat snap-on molding

5-S Half round snap-on molding

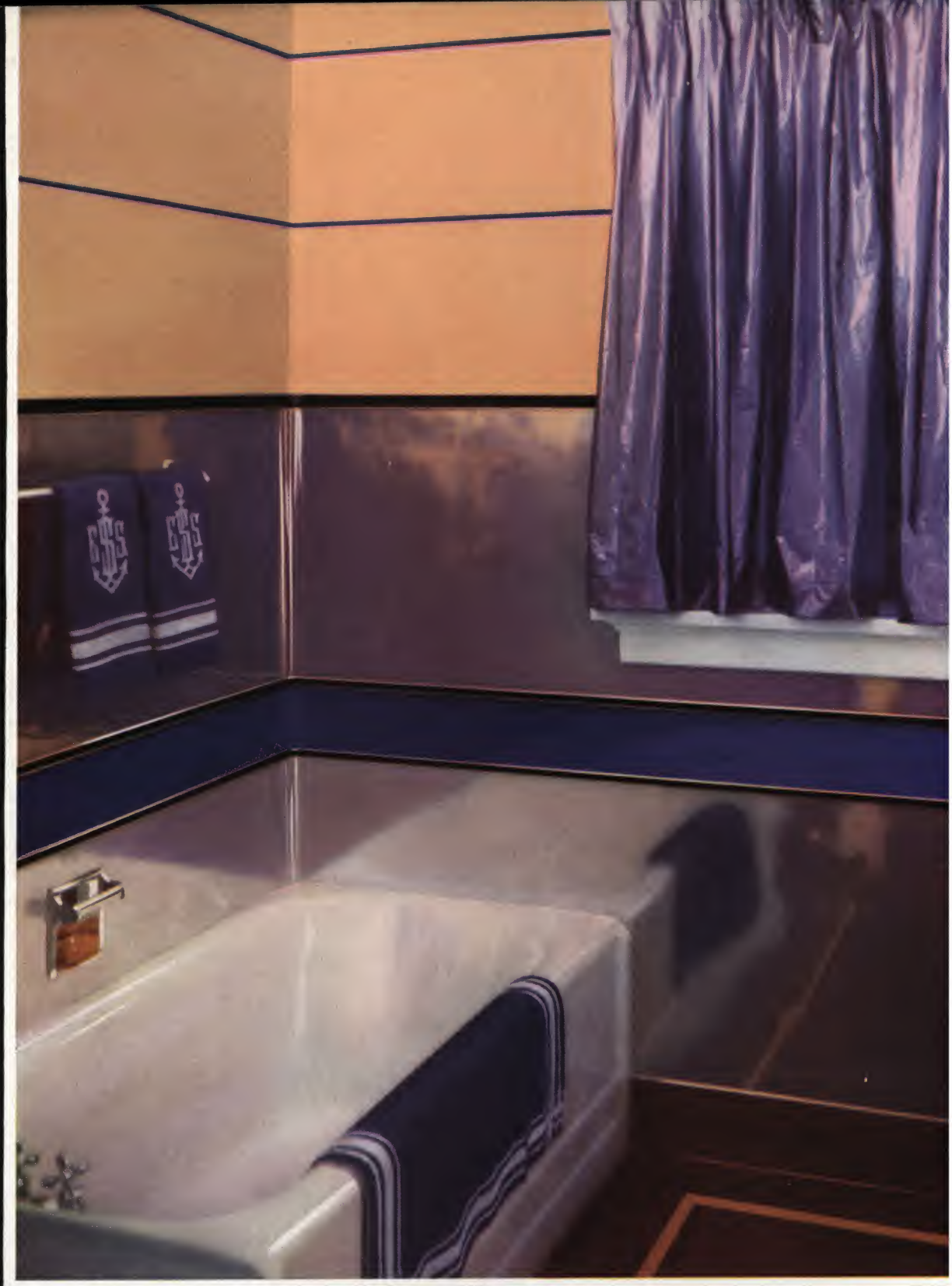
1019 Cap snap-on molding

5-IS Inside corner — snap-on molding

We present here stainless steel moldings especially selected for use with Ludlite. In addition to the styles illustrated, Allegheny Metal and other Allegheny stainless steels are available in every needed form or shape.

LUDLITE

A NEW MEDIUM FOR CREATIVE DESIGN



This natural color photograph visualizes the unusual decorative possibilities of Ludlite, the distinctive new and economical form of stainless steel. In the bathroom illustrated, horizontal wall panels of Ludlite have been separated by a strip of blue linoleum.

Ludlite offers an entirely new decorative medium for the reflection and blending of color; it harmonizes with any color scheme. The effects possible with combinations of Ludlite and other colored surfaces or objects are limited only by the imagination and skill of the designer.

ALLEGHENY LUDLUM

STEEL CORPORATION AL **PITTSBURGH, PA.**

Steels of Today and Tomorrow

FORMICA

WALL COVERING

BASING • CABINET, COUNTER AND TABLE TOPS

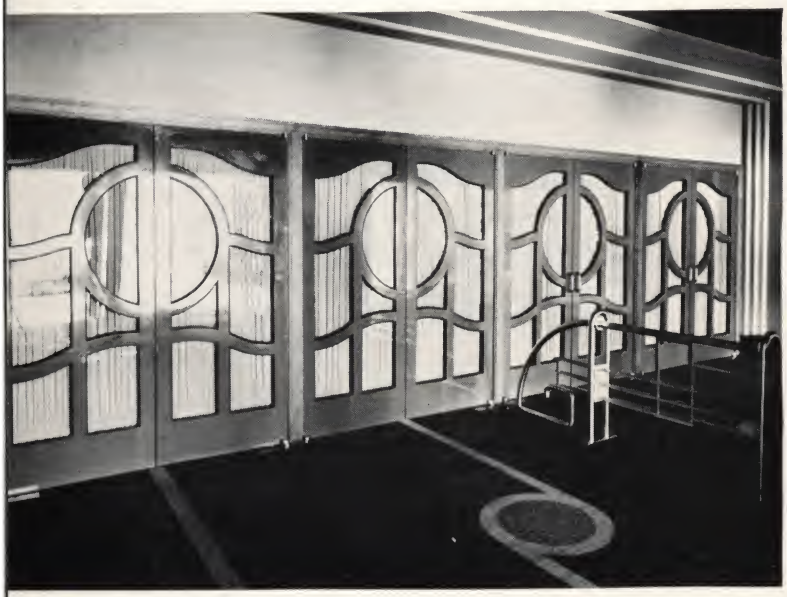
FORMICA

MODERN MATERIAL OF STRIKING COLOR, SURFACE AND DECORATIVE FLEXIBILITY!

THE FORMICA INSULATION COMPANY - - - CINCINNATI, OHIO

● Formica Table Tops in the main lounge of the Dutch steamer, "Nieuw Amsterdam."

● Recreation Room Formica Doors and Panels in the home of Nathan Goldblatt, Wilmette, Ill. Designed by Benjamin Marshall & Associates, Evanston, Ill.



● Formica Doors in Warner Brothers Colony Theatre, Shaker Square, Cleveland, Ohio. John Eberson, Architect.

● Formica Table Tops in the factory cafeteria of Eli Lilly & Co., Inc.

● Formica Counter Top and Counter Paneling in the Home Federal Savings & Loan Offices in Chicago. Designed by Wesley & Jones, Chicago.

● Formica Cigarette and Solution-proof Tops on bedside table and dresser in St. Michael's Hospital, Toronto, Ontario. Installed by T. Eaton & Co.

FORMICA INSULATION COMPANY

CINCINNATI, OHIO

BRANCH FACTORIES

NEW YORK, N. Y., 101 Park Avenue

CHICAGO, ILL., 111 No. Canal Street

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ATLANTA, GA., 526 Forrest Ave., N. E.
BALTIMORE, MD., 100 W. 22nd Street
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BUTTE, MONT., P. O. Box 166
CLEVELAND, OHIO, 523 Caxton Building
DALLAS, TEXAS, Santa Fe Building
DENVER, COLO., P. O. Box 275
DETROIT, MICH., 544 Book Building
HARTFORD, CONN., 647 Main Street
HAVANA, CUBA, 51 Calle Obispo
JACKSONVILLE, FLA., 418 Park Street
KANSAS CITY, MO., 310 E. 17th Street
LITTLE ROCK, ARK., 216 Donaghey Building
LOS ANGELES, CAL., 1117 Santee Street
MEMPHIS, TENN., 202 Builders Exchange
MIAMI, FLA., 144 N. E. 21st Street
NASHVILLE, TENN., 1207 Warner Building
NEW ORLEANS, LA., 4516 D'Hemecourt Street
PHILADELPHIA, PA., 201 Architects Building
PITTSBURGH, PA., 405 Penn Avenue
PORTLAND, ORE., Couch Building
QUINCY, MASS., P. O. Box 244
ROCHESTER, N. Y., 25 North Street
SALT LAKE CITY, UTAH, 204 Interurban Depot Building
SAN FRANCISCO, CAL., 123 Kansas Street
SEATTLE, WASH., 111 Canadian National Pier
ST. LOUIS, MO., 4535 Lindell Blvd.
TAMPA, FLA., 805 Peninsular Telephone Building
TOLEDO, OHIO, Second National Bank Building

Colorful, Lasting, Modern

Formica is a modern, plastic finishing material for all sorts of flat surfaces. It is very inert chemically and therefore spot and stain proof and, as it is cured under high pressure, is very hard and wear resistant.

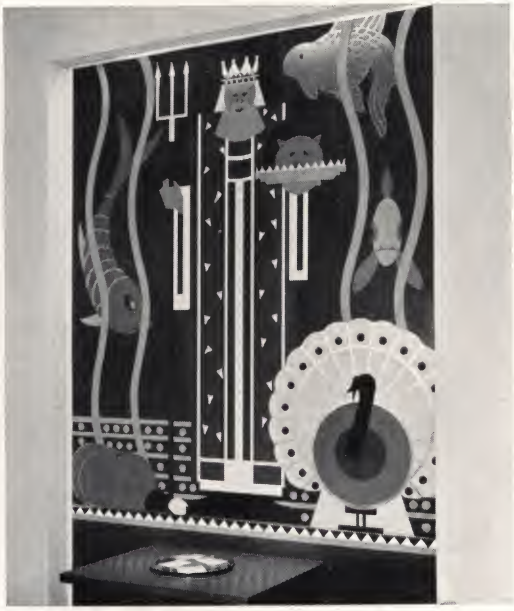
Formica is available in a very wide range of colors and finishes and in satin, high gloss and morocco surfaces. Actual wood veneers are used as the top lamination of the Formica sheet in the "Realwood" type, producing a genuine wood finish with all the characteristics of a plastic.

Inlays in simple designs can be made by pressing one color over another when the sheet is made, or the inlay may be in metal in natural white or other anodized colors.

Realwood Formica—A new development in Formica of great interest to architects and designers is this product in which an actual thin wood veneer is used as the top lamination of a Formica sheet, providing a wood finish sheet that is not imitative but offers the actual grain of real wood. It is a method of giving wood all the qualities of a plastic — stable color, resistance to abrasion, chemical inertness.

Forms of Formica—Formica is offered in the form of 1/16 inch sheet which a wood working house can veneer to flat surfaces to produce table tops, wall paneling, etc. It is available as a wall board in three thicknesses. It may be had in the form of molded channels, angles and other special shapes. It may be purchased from the Formica factory already veneered to plywood and ready for installation as table and counter tops, wall paneling, etc.

● This Soffitt or Ceiling in ivory colored Formica is one of the features of a chain store unit on State Street, Chicago.



● Large Mural in many striking colors on the walls of Sholl's Cafeteria in Washington, D. C.

● Formica Bar Top and Table Tops in the bar lounge car on the Twentieth Century Limited of the New York Central Railroad. Designed by Henry Dreyfus.

● Formica Paneling about the Doors and Formica Table Tops in one of the cars of the Twentieth Century Limited.

● Formica Wall Covering on the Bath Room of the Chicago home of Irving Soloman.

● Formica Table Top in the main lounge of the observation car on the Twentieth Century Limited.

● Formica Inlay in the bath room of I. F. Murdock, Squantum, Mass. Gunnar Peterson, Architect.

Table and Counter Tops

Formica table tops are the leading equipment of that sort for public rooms where table tops must stand severe service and at the same time contribute something to the decorative treatment of the room — in restaurants, hotels, steamships, and de luxe trains. These tops may be strikingly colorful and with inlays may add a great deal to the decoration. The edges may be the same color as the top surface or the same color with lines in a contrasting color, or silver and black, or in the case of the Type M top plain white metal in the form of a heavy extruded aluminum molding.

Formica tops are built by veneering 1/16 inch Formica sheet to five-ply wood. If cigaretteproof grade is specified, the tops are guaranteed not to be injured by lighted cigarettes. There is also a waterproofing ply of Formica on the bottom of all tops to minimize warping.

Counter Panels—Formica panels are used on all sorts of counters, bars, soda fountains. This may be a Formica surface on hardboard, a kind of wall board attached to a wood or metal back. It may be a Formica sheet built on sheet metal as a center, or it may be 1/16 inch sheet veneered to plywood in much the same way that table tops are built.

Wainscot—The material used for this purpose is a Formica sheet with hardboard used as the center, which is available in 5/32, 9/32 and 11/32 of an inch thick. It may be installed with Formica baseboard and with bright metal cover strips over the joints or it may be flush joint construction. Construction details for both types are shown in the detail on pages 8, 9 and 10. If cover strips are used, the edges of the Formica hardboard sheets are nailed to the backing and the heads of the nails are then covered with the metal molding. For this purpose the 5/32 inch sheet is used. For flush joint construction the 11/32 inch sheet is recommended with tongue and grooved wood strips glued to the edges or with special hardware fastenings attached to the back of the sheets. The material is installed by carpenters. The sheet sizes are 24 and 36 inches wide and 42, 84 and 96 inches long.

Basing and Mop Boards—Formica is used for basing on show cases or mop boards in rooms in the form of molded channels — made in widths of 4 to 8 inches with no fractional sizes and backed with wood. It may be provided with nails protruding from the wood at the back so it merely has to be pounded into place. It may have either a beveled or a round top. Some makers also build show cases by gluing 1/16 inch Formica sheet to the bottom of the case. The material is very resistant to alkalies in washing solutions and will give long service without deterioration of the surface.

Doors of Formica— These are flush type doors with either wood or fireproof cores and with such inlays in metal or Formica as may be desired. The doors are made by veneering 1/16 inch Formica to specially constructed wooden door cores with hardwood inserts where the hinges are attached. Fireproof doors may be made by attaching 1/16 inch Formica sheet to standard Kalamein doors.

● Formica Realwood Wall Paneling. Prima Vera with Walnut inlays in the master store of the F. W. Woolworth Company on Fifth Avenue, New York.

● Another view of the Realwood Wall Paneling in the New York store of the F. W. Woolworth Company.

Revolving Doors—Revolving doors and revolving door housings are offered by leading makers of revolving doors and may be in colors with inlays.

Elevator Doors—Formica surfaces with inlays in metal or Formica are available in standard elevator doors.

Kick Plates and Push Plates—These are cut from Formica sheet in any color or grade 3/32 or 1/8 inch thick. The edges are beveled and countersunk screw holes are provided for fastening them in place.

Window Stools—These are made with a molded Formica channel into which wood is glued. The ends are veneered with Formica sheet. Stools are fabricated to dimensions at the factory.

Kitchen Cabinet and Table Tops—On tops for kitchen cabinets and tables, butlers' dressers, and breakfast table tops, Formica is veneered to plywood if there is no sink involved. If there is a sink the tops may be built by veneering Formica to asbestos board which will not change dimensions with moisture absorption or of solid Formica sheet about 1/4 inch thick and a wood frame which is finished with Formica on the edges. The edges of the sink hole are covered with Formica. There is a backsplash of Formica cemented to metal or one with Formica glued to wood depending on the type of board or service for which it is intended. These tops may also have end splashes and raised edges at the front to keep water from running off the top.

Formica Tops for Bedroom Furniture—In hotels, clubs and steamships where the tops of bed or state room furniture are sometimes marred by smokers, they can be protected by a "cigaretteproof" Formica sheet. On new furniture these are ordinarily put on at the furniture factory; they can also be cemented or mechanically fastened to furniture that is already in use.

Elevator Cab Interiors—Formica on hardboard may be used to line elevator cabs. It will stand a lot of wear and will not be injured by moisture from umbrellas, wet rain coats and other clothing. It is used also on the walls of elevator lobbies in many buildings.

Ornamental Signs—Formica signs may be produced by inlaying lettering of one color of Formica on a contrasting field color or by inlaying white or other colored metal. Signs may also be printed in gold or silver by the Verichrome process. Translucent Formica may be made with a white body and opaque colored surface. The opaque surface may be sandblasted away to form a sign.

Translucent Formica—This is made in white and several colors. It may be had with an opaque face in any Formica color. Translucent Formica is made in flat sheets only, in various thicknesses, but these sheets may be heated in warm water and bent to a radius so that they will serve some of the purposes of tubing. Modern lighting fixtures using flat translucent sheet have been designed and are available from certain fixture manufacturers.

Fabrication and Distribution—The main plant of the Formica Insulation Company at Cincinnati carries many varieties of Formica sheet in stock and produces sheets to order in about two weeks. There are branch factories with stocks and cutting equipment in New York and Chicago. The material is fabricated to architects' details for erection by others.

Special publications are available giving more detailed information on wainscoting, soda fountains, doors, table tops, etc.

● Formica Doors in a light mottled finish in the Cine Theatre, Chicago. Specified by E. W. Co., George L. Rapp.

● Formica Wall Paneling in the bath of one of the de luxe suites on the flagship of the Holland-American line, the steamer "Nieuw Amsterdam."

B—No. 102

B—No. 197

B—No. 238

B—No. 342

B—No. 319

B—No. 112

B—No. 106

B—No. 278

B—No 101

B—No. 110

B—No. 111

B—No. 113

B—No. 107

B—No. 32

B—No. 59

B—No. 108

B—No. 35

B—No. 594

B—No. 386

B—No. 328

B—No. 224

B—No. 331

B—No. 115

B—No. 114

B—No. 105

B—No. 389

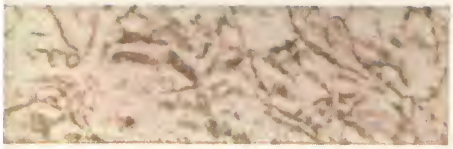
B—No. 476

B—No. 524

B—No. 103

No. 24—DECORATED

Note: Ribbon Prima Vera, Zebra Wood, Satin Wood, Quartered Walnut, Claro veneer is used as the top lamination of the Formica sheet. Finishes numbered 16



No. 1703

QUARTERED WALNUT

G—No. 1197

No. 1602

No. 29 —DECORATED

CLARO WALNUT

G—No. 1386

LACE WOOD

No. 1705

No. 1601

H—No. 904

No. 1704

FIGURED MAHOGANY

H—No. 2113

RIBBON PRIMA VERA

No. 1626

H—No. 1111

ZEBRA WOOD

No .1612

H—No. 6113

SATIN WOOD

H—No. 903

H—No. 4032

No. 1603

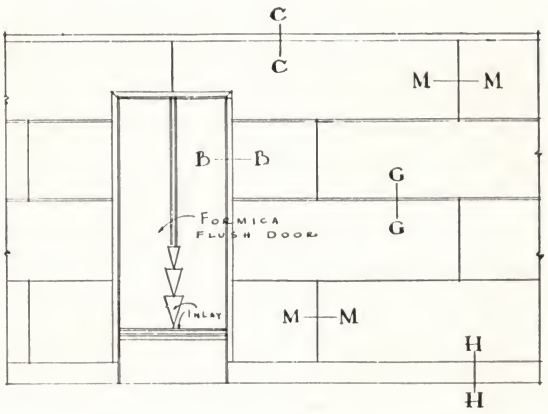
H—No. 902

H—No. 2116

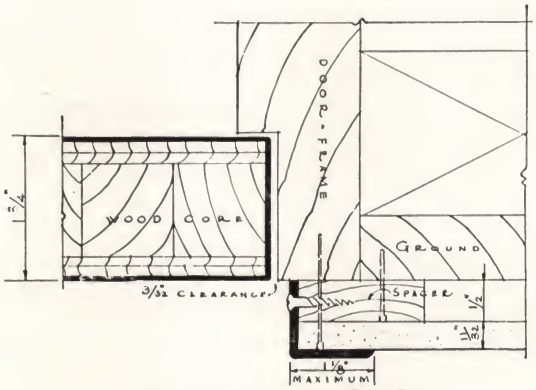
INLAID DESIGN

*Wood, and Figured Mahogany are "Realwood Formica"; that is, an actual wood
, 1626 and 1612 are imitation woods made with printed photographic grains.*

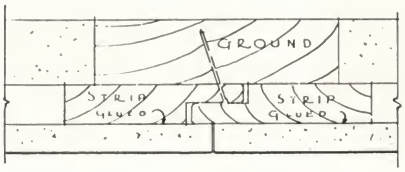
FORMICA



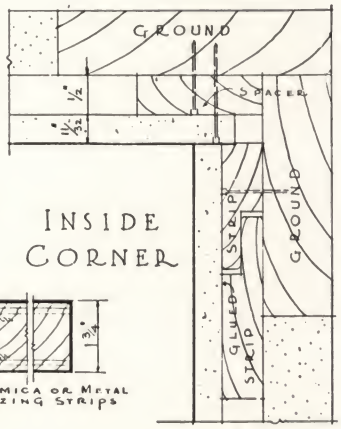
WALL - ELEVATION



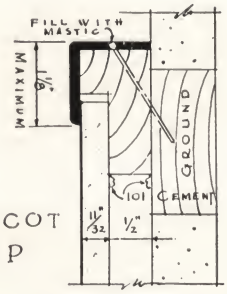
SECTION - B - B



M - M

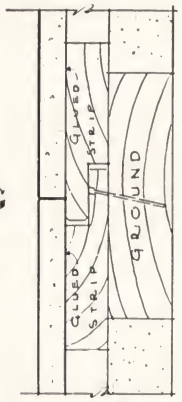


INSIDE CORNER

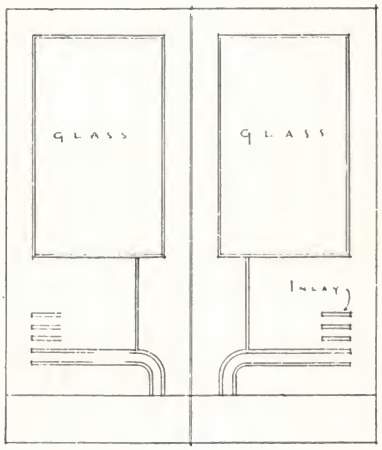


WAINSCOT CAP

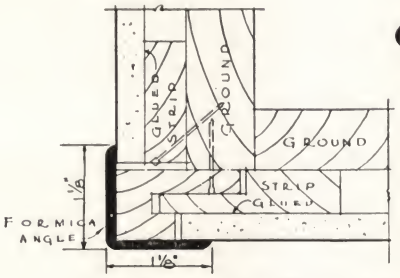
DOOR - SECTION



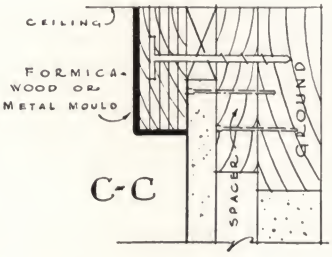
G - G



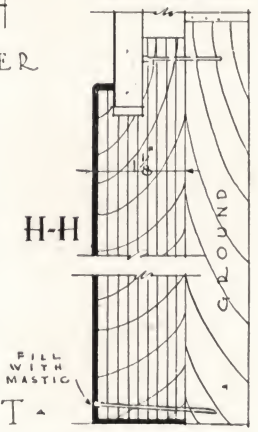
ELEVATION
FORMICA - DOORS



OUTSIDE CORNER



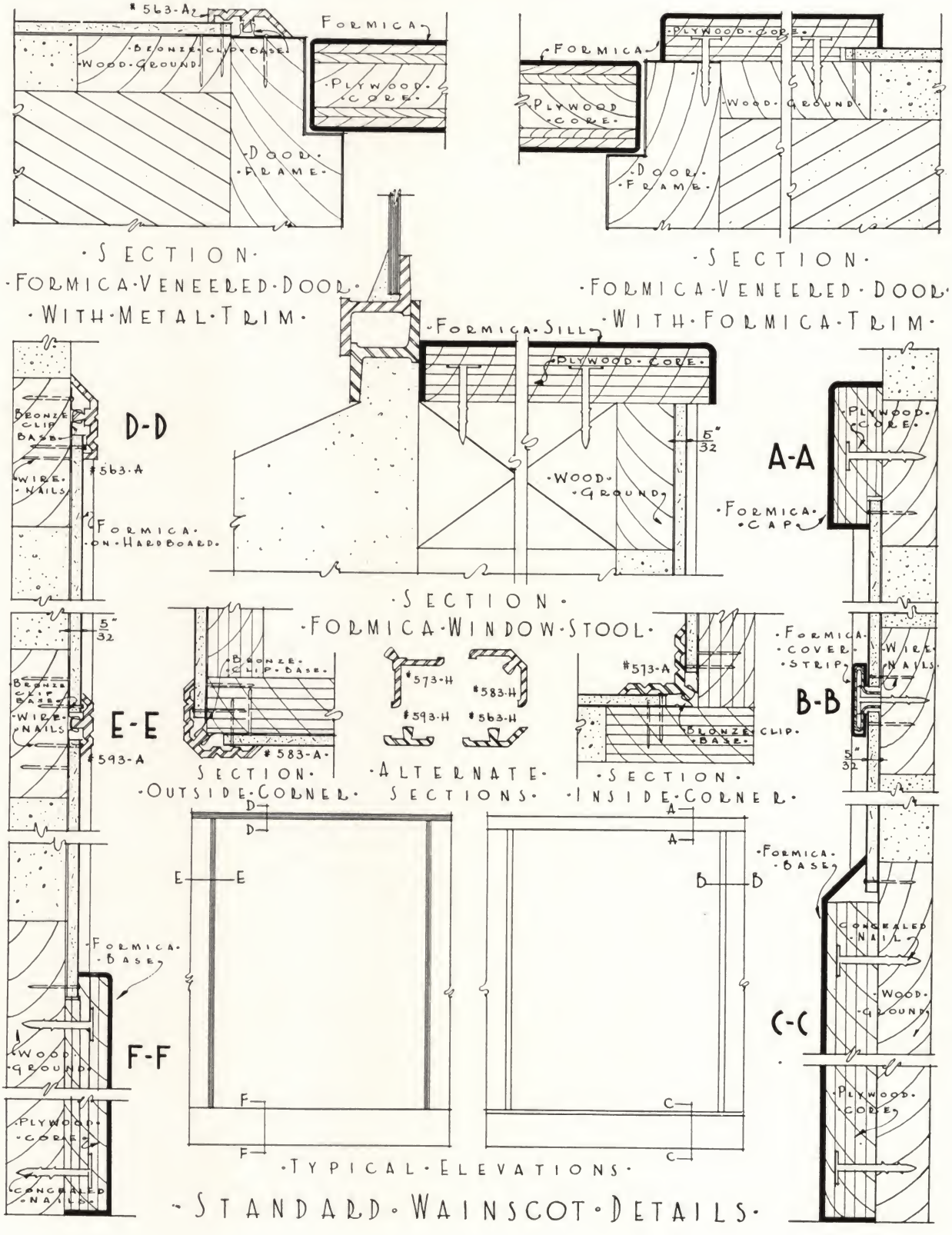
C - C



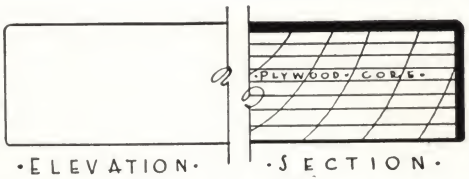
H - H

- INTERIOR - FLUSH - JOINT - WAINSCOT -

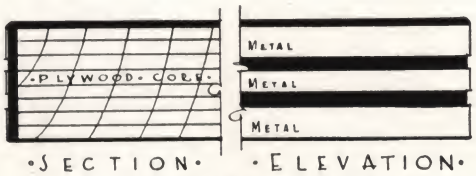
FORMICA


#563-A
FORMICA
BRONZE CLIP BASE
WOOD GROUND
PLYWOOD CORE
DOOR FRAME
SECTION
FORMICA VENEERED DOOR
WITH METAL TRIM
FORMICA
PLYWOOD CORE
PLYWOOD CORE
WOOD GROUND
DOOR FRAME
SECTION
FORMICA VENEERED DOOR
WITH FORMICA TRIM
FORMICA SILL
PLYWOOD CORE
5/32"
WOOD GROUND
SECTION
FORMICA WINDOW STOOL
BRONZE CLIP BASE
WIRE NAILS
#563-A
FORMICA ON HARDBOARD
D-D
5/32"
BRONZE CLIP BASE
WIRE NAILS
#593-A
E-E
BRONZE CLIP BASE
#583-A
SECTION
OUTSIDE CORNER
#573-H
#583-H
#593-H
#563-H
ALTERNATE SECTIONS
#573-A
BRONZE CLIP BASE
SECTION
INSIDE CORNER
PLYWOOD CORE
FORMICA CAP
A-A
FORMICA COVER STRIP
WIRE NAILS
B-B
5/32"
FORMICA BASE
WOOD GROUND
PLYWOOD CORE
CONCEALED NAIL
FORMICA BASE
WOOD GROUND
PLYWOOD CORE
CONCEALED NAILS
F-F
D
D
E
E
F
F
TYPICAL ELEVATIONS
A
A
B
B
C
C
C-C
STANDARD WAINSCOT DETAILS

FORMICA

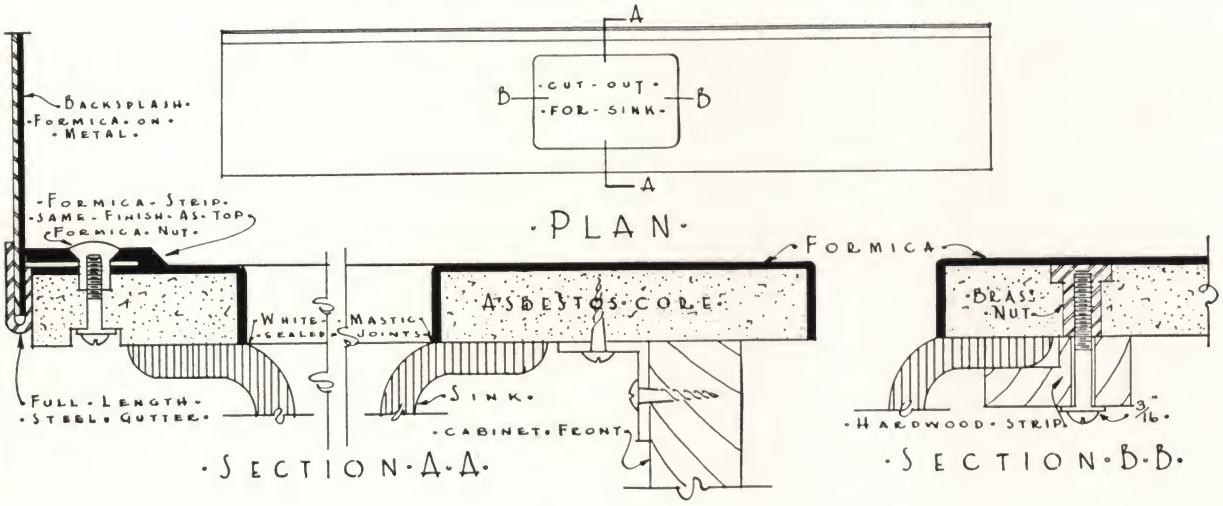


PLAIN EDGE



GROOVED METAL EDGE

COUNTER & TABLETOP CONSTRUCTION

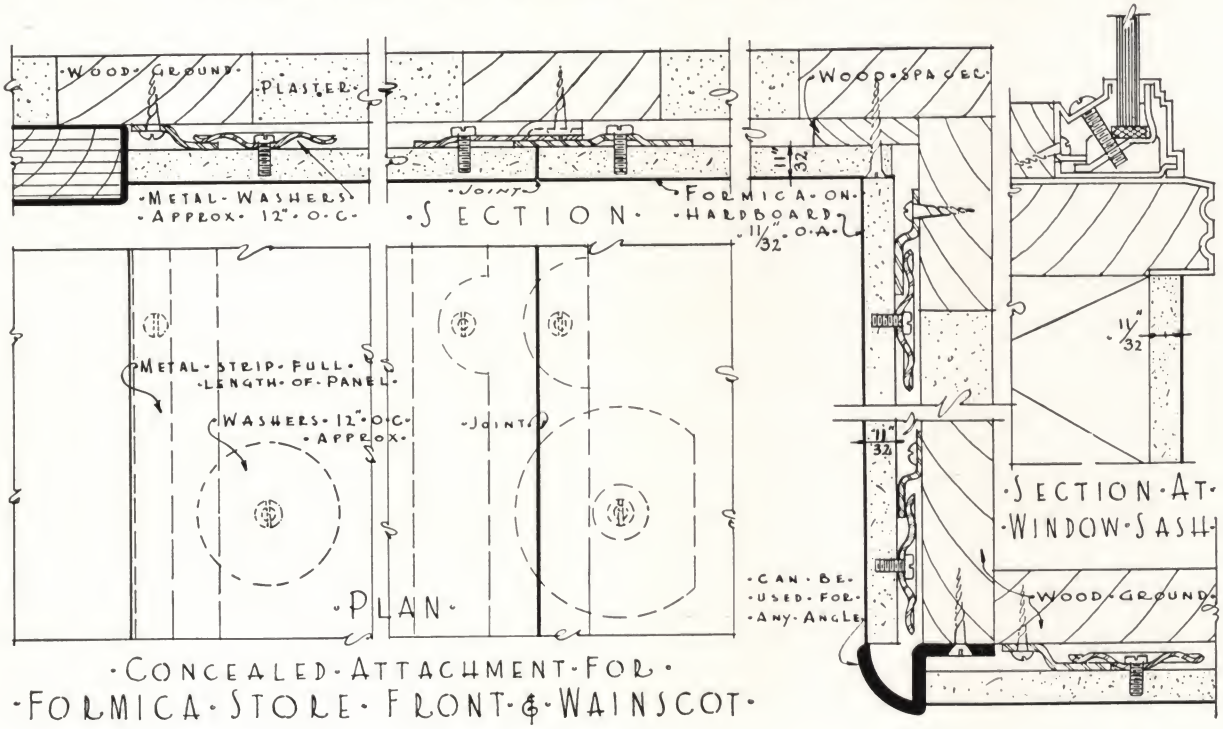


PLAN

SECTION A-A

SECTION B-B

FORMICA DRAINBOARD CONSTRUCTION



CONCEALED ATTACHMENT FOR
FORMICA STORE FRONT & WAINSCOT

● Formica Counter, curved and colorful, in Rockey's Sodette, Book Building, Detroit, Michigan.

● Formica Table Tops and Wall Paneling in a special Murray Blue in one of the large units of Murrays, Inc., a leading Canadian Restaurant Chain.

● Formica Table Tops, Counter Tops and Wall Paneling, home of I. F. Murdock, Squantum, Mass. Gunnar Peterson, Architect.

● Formica Linen Finish Table Tops, coffee shop of the Cornhusker Hotel at Lincoln, Nebraska.

● Formica Counter with White Paneling in the Read Drug Store, Howard and Lexington Streets, Baltimore, Md.

● Formica Tops and Wall Paneling in a home designed by Gunnar Peterson, Architect.

● Formica Table Tops in oak finish in a large school building in up-state New York. Installed by Brayton & Co., Utica.

● Formica Counters and Column Covering in the luncheonette of the Shillito Department Store at Cincinnati.

● Formica Realwood Paneling and Game Table Tops in a private yacht built for use in the Philippines.

● Formica Counter Tops on a Glass Brick Counter in Mammy's Waffle Shop.

● One of the new type "open" Prescription Counters worked out in black Formica with silver inlays. Read Drug Company, Baltimore, Md.

● Formica Tops with center sliding unit in the Elizabeth Arden Beauty Salon at 70 West Walton Place, Chicago. Specified by Holabird & Root.

JOHNS-MANVILLE

EXECUTIVE OFFICES

22 E. 40th St., NEW YORK

Products

J-M Asbestos Flexboard and Wainscoting.

For the following Johns-Manville products, see File Index: Insulating Board; Asphalt Tile Flooring; Flush Doors; Acoustical Treatment; Transite Walls; Transite, Flat and Corrugated Sheets; Home Insulation; Built-up Roofing; Roof Insulation; Asbestos and Asphalt Shingles; Pipe Covering and Insulation; Steeltex for Plaster, Stucco and Brick Veneer; Steeltex Floor Lath.

JOHNS-MANVILLE ASBESTOS FLEXBOARD

Green
(also available in plain sheets)

Light Gray
(also available with tile scoring)

Rose
(also available with tile scoring)

Slate
(also available with tile scoring)

This colorful, fireproof, durable, asbestos-cement sheet is flexible enough so that it can be made to conform to surfaces having a considerable curve, yet perfectly rigid on 16″ spans. It can be sawed and nailed like wood; and is so easy to handle that it can be applied as quickly and easily as any fibre board. Its large sheets cover the wall quickly, with the minimum number of joints.

Asbestos Flexboard is made in two styles, Decorative and Standard: Decorative, designed to provide colorful, sanitary, decorative wall finishes in homes, offices, stores or public buildings; Standard for a wide range of utilitarian uses, indoors and out. Details of these styles are discussed in the following pages.

The low cost of Asbestos Flexboard not only recommends it for new work but also solves one of today's major building problems — the wall re-surfacing of existing structures that must be modernized on limited budgets.

Buff
(also available in plain sheets)

On the "pleasure ship" Tango, hailing from Los Angeles, the bar, cashier's desk and service counter utilize the possibility of curving Decorative Flexboard

The impervious surface of Decorative Flexboard which can be effectively cleaned with a damp cloth makes an ideal wall for a professional office

In this ultra-modern kitchen and curved breakfast nook, both plain and scored Decorative Flexboard have been used with telling effect

J-M Decorative Asbestos Flexboard

As a distinctive wall finish for new or old work, Decorative Asbestos Flexboard is furnished either in plain or scored sheets, with a smooth, lustrous, factory-applied wax finish. The material has an attractive mottling, due to its asbestos fibre content, and is available in five shades—green, buff, light gray, rose and slate. The colors of Decorative Flexboard are not surface coatings; they are an integral part of the material itself.

Decorative Flexboard is highly wear-resistant. It is so hard that it can be marred only by excessive abuse, yet it is readily sawed and nailed and may even be curved to a considerable extent.

In new construction, Decorative Flexboard is applied over a solid base of plywood or similar material. On old walls, it may be applied directly over the old plaster, or other solid grounds.

Sheets are usually fastened with chromium-plated escutcheon pins or drive screw nails. Joints may be flush, beveled, battened or covered with polished metal mouldings, which may be used in addition to nailing.

In kitchens, lavatories, game rooms, beauty salons, barber shops, florist shops, department stores, restaurants, show rooms, stores, corridors and lobbies; wherever a colorful, decorative and sanitary finish is desired, Johns-Manville Decorative Flexboard is not only the ideal material, but the most economical as well.

Decorative Asbestos Flexboard is furnished scored (4″ c-c) in sheets 4′ x 4′ x ⅛″. Also furnished *unscored* in sheets 4′ x 8′ x ⅛″. Decorative Flexboard Battens, for use over joints, are furnished in 4 ft. lengths, in widths of 1¼, 2 and 4 in.

Unscored Decorative Flexboard in horizontal panelling provides an attractive wall treatment at little cost. The colors conform delightfully with modern interior decoration schemes

J-M Standard Asbestos Flexboard

The original, semi-rigid asbestos-cement sheet, J-M Standard Asbestos Flexboard, has wide utility, both in and out of doors. It is fireproof and durable. Its surface is cement-like in nature and can be left unfinished if moderate color variation is not objectionable. It can be painted after priming with linseed oil, two coats.

Applied over studs or furring in new construction, or right over the old plaster walls in existing buildings, it provides an attractive, serviceable wall finish.

The uses for Standard Flexboard are virtually without number. They include permanent partitions, door facings, open porch ceilings and garage lining; table tops, fire-resistant storage room and laundries; also summer bungalows, roadside stands, overnight cabins and boat houses; truck bodies, elevator shafts and fur storage vaults; and the lining of farm buildings such as chicken houses, brooder houses and milk houses, over insulation.

Because it is made of asbestos and cement, Flexboard will not rot or disintegrate. Rodents and vermin cannot pass through it. Although it readily takes paint, it needs no preservative treatment of any sort, either indoors or out. For special tile effects, the scored sheets can be painted to suit.

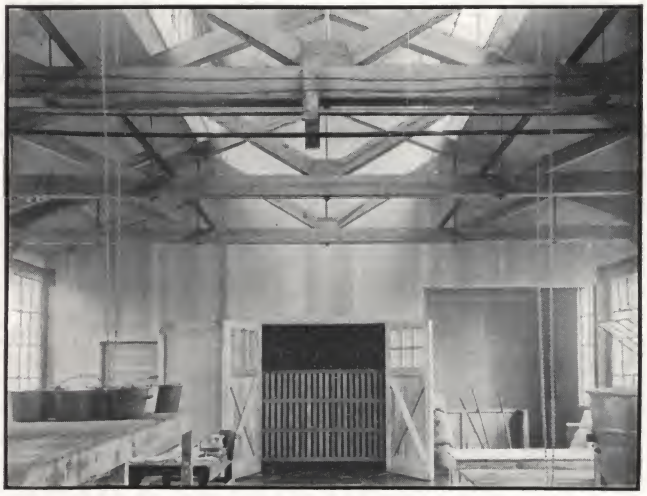
Where protection from heat or cold is desired, J-M Asbestos Flexboard should be applied over a backing of J-M Insulating Board, or J-M Home Insulation batts should be installed between the studs, joists or rafters.

Standard Asbestos Flexboard is made only in unpolished, gray colored sheets, in two styles: 4′ x 8′ x $\frac{1}{8}$″ thick sheets, scored on 4″ centers and 4′ x 8′ sheets, unscored, in thicknesses of $\frac{1}{8}$″ and $\frac{3}{16}$″.

J-M Standard Flexboard, painted in colors of the owner's selection, makes an excellent exterior treatment which defies decay

J-M Standard Flexboard provides for garages an easily cleaned, fireproof lining that needs no painting to preserve it

J-M Standard Flexboard, painted in cool, light-reflecting colors, makes a pleasant and hygienic wall surface for basement laundry rooms



The entire interior of this plant (walls, ceiling, and elevator shaft) is constructed of J-M Standard Flexboard for sanitation and fire-safety

Application of Asbestos Flexboard

Asbestos Flexboard $\frac{3}{16}$" thick may be nailed direct to studding or rafters. For $\frac{1}{8}$" thickness, a solid backing, which may be an existing board or plaster surface, is recommended. 4d casing head nails may be used with $\frac{3}{16}$" Flexboard and button head drive screw nails or escutcheon pins with $\frac{1}{8}$" sheets. The material can be nailed close to the edge without cracking. Sheets should be fastened on not over 16" centers at intermediate points. If mouldings are not used, edges should be fastened on not over 8" centers.

Asbestos Flexboard can be applied to curved surfaces with the following minimum limitations:

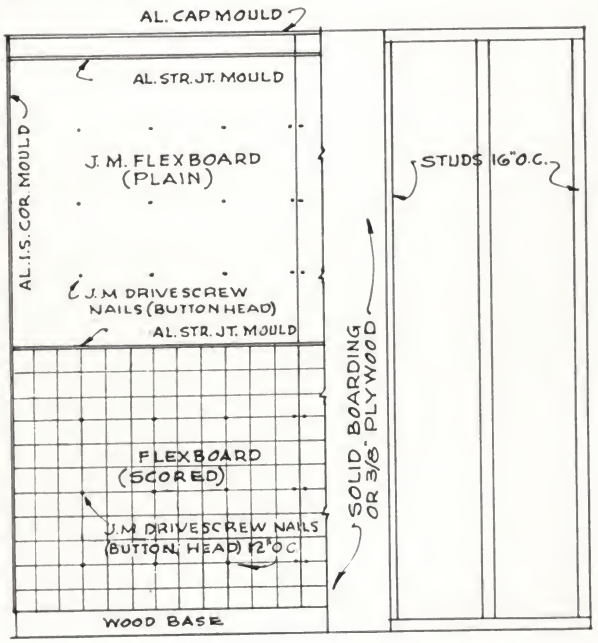
Thickness of sheets, in.	Longitudinal radius, in.	Transverse radius, in.
$\frac{1}{8}$	30	36
$\frac{3}{16}$	36	54

Joints between the sheets may be either left square or beveled on the job. Battens or metal trim can be used, as desired.

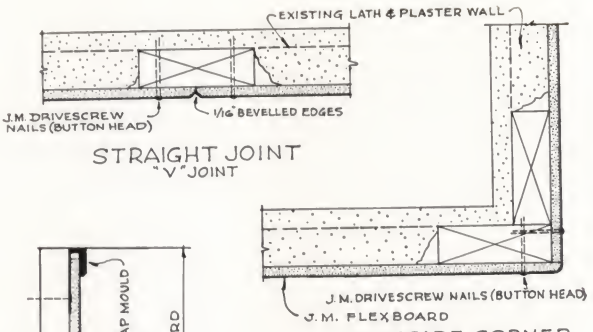
Battens, where used, can be either Flexboard Battens (as described on page 2), or strips carefully cut from Flexboard sheets. If there is no fire hazard, wood batten strips may be used.

Where the decorative effect of metal trim is desired, aluminum mouldings are available. Their polished exposed faces combine attractive appearance with unusual resistance to corrosion. Extruded aluminum is easily worked. At intersections, mouldings can be coped and mitered with a hacksaw. Nails can be driven through the flanges, a shallow groove $\frac{1}{4}$" from the edge acting as a guide.

Aluminum mouldings are furnished in four forms: Cap moulding, outside corner moulding, inside corner moulding and straight joint moulding. The cap moulding may be applied first and the Flexboard slipped into it. When applying an outside corner moulding or straight joint moulding, it is permissible to nail one flange only. The other flange may be slipped into place under the sheet of Flexboard already applied.

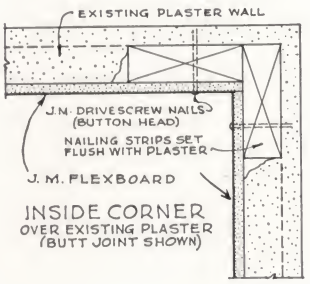


FULL HEIGHTH FLEXBOARD WALL
OVER SOLID BOARDING

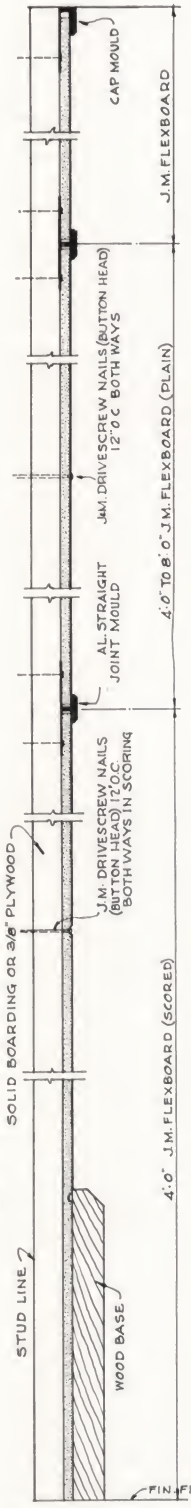


STRAIGHT JOINT
"V" JOINT

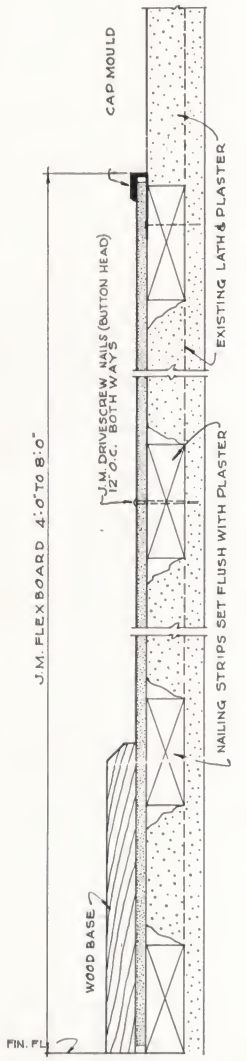
OUTSIDE CORNER
OVER EXISTING PLASTER
(BUTT JOINT SHOWN)



INSIDE CORNER
OVER EXISTING PLASTER
(BUTT JOINT SHOWN)



SECTION THRU FLEXBOARD WALL
CEILING HEIGHT- SCORED WAINSCOT
PLAIN SHEETS ABOVE AND
ALUMINUM MOULDS
(NEW WORK)



SECTION THRU
FLEXBOARD WAINSCOT
OVER EXISTING PLASTER WALL
ALUMINUM MOULDS USED
(OLD WORK)

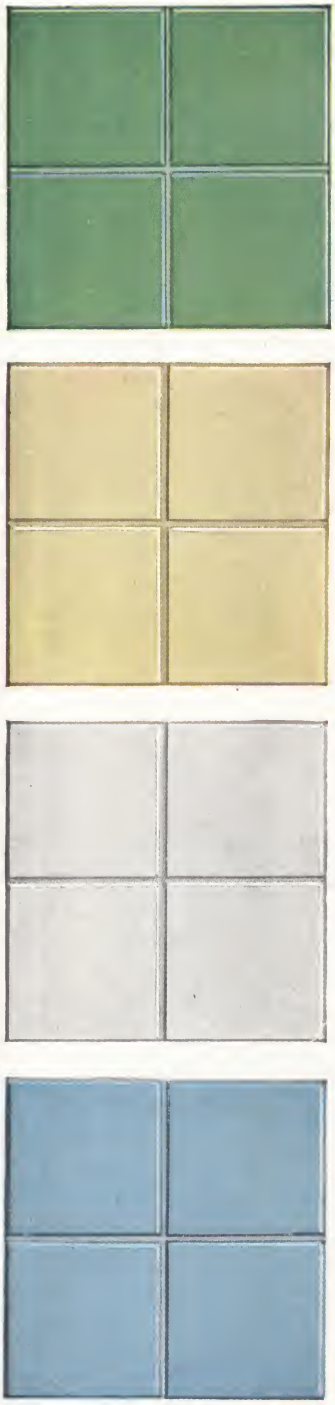
JOHNS-MANVILLE ASBESTOS WAINSCOTING

Johns-Manville manufactures three types of Asbestos Wainscoting, known as marbleized, tile design and color panels, which provide, at only a fraction of the cost, the effects and advantages of more expensive materials.

In the marbleized type, Johns-Manville has faithfully reproduced four of the finest marbles obtainable, the colors and mottling of which are illustrated below. The finish of these reproductions is so identical with the originals that it is almost impossible to distinguish the asbestos wainscoting from the actual marbles, after erection.

The tile design affords the wide choice of the attractive colors shown below and also a lustrous black. All these colors are also available without the scoring for tile effect, in smooth polished sheets known as color panels.

Tile Design



Colors:
Light Green, Ivory, White, Light Blue
(Black on special order)

J-M Asbestos Wainscoting Details

J-M Asbestos Wainscoting—available in three finishes—is made of asbestos fibre and Portland cement, moulded under great pressure into rigid, fireproof sheets. The three finishes available provide, respectively, the effect of tile, marble, or plain colored surfaces.

The face surface has a special "baked-on" finish which will not crack or craze and which will stand up under any normal conditions of use. It is sanitary and can be cleaned with ordinary soap and water. Cap and base units of the same material, similarly finished, are available.

The tile design sheets have scored joint markings forming four inch squares, which gives the effect of 4" tile set in cement. The tile design is furnished in black, white, ivory, light green and light blue, with the tile joint marking in white, except on white tile, on which the scoring is marked in gray. Separate cap and base strips are available in the same colors.

The marbleized design sheets are reproductions of the surface appearance, in identical detail, of the four marbles—Verde Antique, Black and Gold, Jaune Fleuri and Breche Rose, as illustrated here. Wherever the effect of fine marble is desired, as in foyers, banks, smart shops and sales rooms, Johns-Manville Marbleized Wainscoting answers every requirement, at only a fraction of the cost. It is also being increasingly used for bathrooms in homes of all types, in new structures and for remodelling.

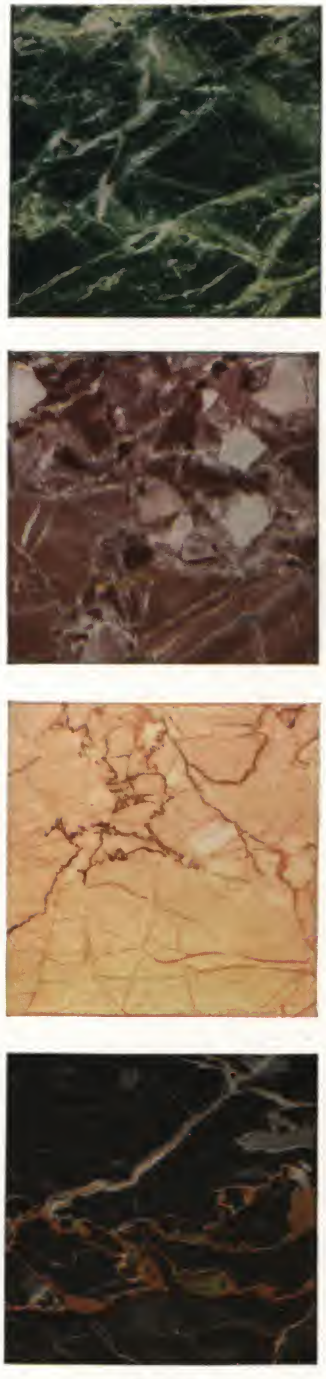
In the third type — designated as Color Panels — the sheets are furnished in black and the other colors of the tile design, but are unscored. With cap and base moulding in the same or contrasting color, or black, J-M Color Panels give effects in decoration which are modern, attractive and yet inexpensive.

Tile design and color panels come in sheets 48" x 48" x ¼"; the marbleized type measures 32" x 48" x ¼". The base and cap units are 4 ft. long; the tile base 5" wide, the marbleized base 6" wide; the tile cap 1½" wide, the marbleized cap 3" wide. The sheets weigh approximately 3 pounds per square foot, in either of the types.

Accessories for J-M Asbestos Wainscoting

For securing the various units, special 1½" nickel plated nails are provided, with casing heads for the tile and marbleized sheets and button heads for the plain. Joint cement and lacquer-enamel of the proper color for touching-up over nail heads accompanies each shipment.

Marbleized Design



Colors:
(reading down)
Verde Antique
Breche Rose
Jaune Fleuri
Black & Gold

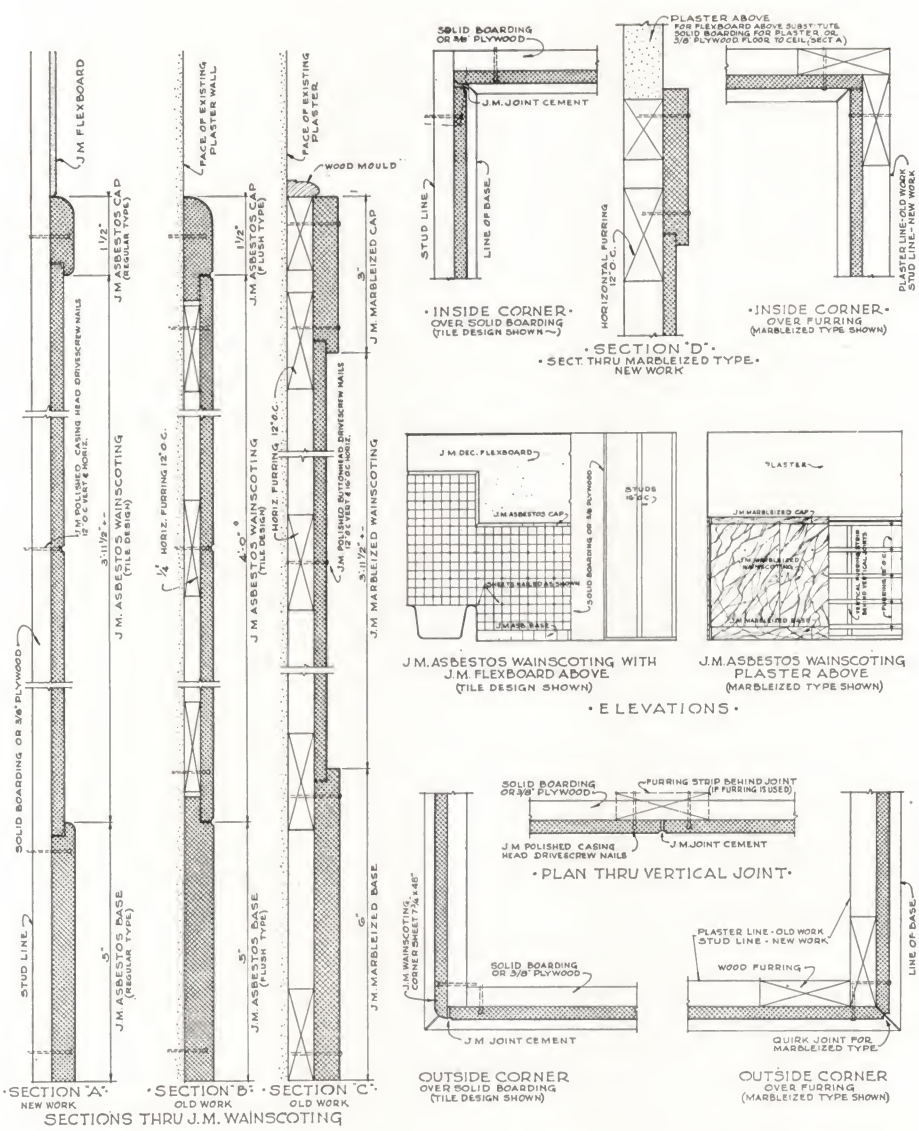
Application of J-M Asbestos Wainscoting

J-M Asbestos Wainscoting can be applied by anyone familiar with ordinary tools, the various units involved being readily cut with a hack-saw and drilled with an ordinary twist drill. Installations may be made over new or existing work, fastened to studs in wood frame construction or wood grounds in other types. Such surfaces as are to receive the wainscoting should first be covered with a layer of J-M Insulating Board.

The standard wainscoting sheets are secured at the top and bottom by the cap and base, these units being rabbetted to receive them. Intermediate fastening is provided by special nails or screws, the former being set and touched up with lacquer-enamel, making them practically indiscernible. The cap and base units should be similarly fastened.

The intermediate joints are formed butted in white lead, excess of this material being wiped off after the sheets have been secured. Inside corners are similarly formed. Outside corners may be mitered or, in the case of the tile and color panel designs, may be finished with the bull nose corner strip available in the same colors.

When wainscoting is applied in shower stalls and around bath tubs, the joints are waterproofed with J-M 15-lb. Asbestos Waterproofing Felt applied over the entire area covered by the wainscoting. The felt is lapped 3" horizontally and 6" vertically, and the bottom edge allowed to flash over rim of tub or shower curb. Joint cement is applied to the edges of the wainscoting sheets, and on the backs for ½" along the bottom edges. The sheets must be firmly set in the cement before fastening, and any excess cement removed before it dries.



SHORT FORM SPECIFICATION FOR FURNISHING AND APPLYING JOHNS-MANVILLE ASBESTOS WAINSCOTING

(As the furnishing and applying of this material is generally made a part of the carpentry specifications, the following has been prepared to be so included.)

Note: *The following information relates to work allied with the application of the Wainscoting and should be provided for in the specifications for the work involved.*

Studs shall be spaced at 16" centers and so located as to allow the erection of the sheets of Asbestos Wainscoting with the least amount of cutting and to the most symmetrical arrangement. Studs or grounds shall be provided at all points where nailing is to be done. Grounds shall be provided, to which bath room accessory fittings, etc., are to be secured.

In fire proof construction, grounds shall be set to receive all nailing.

The contractor shall furnish and install Johns-Manville Asbestos Wainscoting (*state whether "Tile Design," "Marbleized Design" or "Color Panel Design"*) to (*state in detail surfaces to be covered*) and Johns-Manville Asbestos Base and Cap.

Height—The Wainscoting shall be erected to a height of (*state height or "as shown on drawings"*).

Color—The Wainscoting shall be (*state color*), the base and cap (*state color*).

Insulating Board Backing — Johns-Manville Insulating Board shall be installed as a backing over which the Asbestos Wainscoting shall be erected.

Installation—The Asbestos Wainscoting and accessories shall be installed in strict conformity with the printed instructions of the manufacturer.

Note: *If this Contractor is to include the erection of the bath room accessory fittings, such as towel bars, etc., so state, including a list of such fittings.*

KEASBEY & MATTISON COMPANY

AMBLER, PA.

DISTRICT OFFICES

ATLANTA, GA. CHICAGO, ILL. CLEVELAND, OHIO HOUSTON, TEX. NEW YORK, N. Y.
PHILADELPHIA, PA. SAN FRANCISCO, CALIF.

For K&M **"Century"** Asbestos Roofing and Siding Shingles, Mineral Wool Home Insulations, Pipe, Sheet and Block Insulations, Asbestos Corrugated and Trafford Tile, see File Index

K&M "Century" ASBESTOS WALTILE

K&M **"Century"** Asbestos Waltile is a strong, rigid sheet material made of asbestos fibre and Portland Cement. Prior to finishing the product, the sheets are impregnated with a waterproofing agent and sanded to provide a perfect finish for the application of lacquers.

The scoring that marks the sheets into 4 in. squares and the half scoring on the edges of the sheets are wheel cuts. The scoring is furnished lacquered. Lacquered scoring is particularly desirable because it prevents the accumulation of dust.

WEIGHTS, SIZES AND SHIPPING DATA

K&M Waltile is supplied in sheets 32 in. by 48 in. by 3/16 in., scored 4 in. by 4 in. Packed and shipped in wooden crates containing ten sheets, weighing approximately 240 lbs.

STANDARD SHEET AND SCORING COLORS		
Standard Color of Sheets	Standard Scoring Color	Special Scoring Colors Not Stocked
White	Buff	Chinese Red, Black, Green
Black	White	Chinese Red, Green
Pink	White	Black
Nankin Blue	White	Black
Apple Green	White	
Buff	White	Black

ACCESSORIES

K&M **"Century"** Asbestos Waltile is held in place at the bottom by K&M Asbestos Waltile Base which is rabbeted and rounded to receive the tiled sheets. The base is of the same material as the sheets and measures 4 ft. long, 3/8 in. thick and 4 or 5 in. wide. The top is held by similarly constructed K&M Asbestos Waltile Cap which measures 4 ft. by 3/8 in. by 1 7/8 in. Band moulding measures 4 ft. by 3/8 in. by 1 7/8 in., and is designed to receive sheets on both sides. Base, Cap and Band may be secured scored every 8 inches and are also furnished plain (without scoring). Scoring is colored to match the sheets.

Metal connectors, Outside Corners and Inside Corners are available for covering joints and securing sheets to the wall. Metal strips are furnished Chromium plated, polished Aluminum or in same colors as sheets.

K&M "Century" DECORATIVE SHEETFLEXTOS

Decorative Sheetflextos is a fire-resisting, flexible wall board, furnished in Buff, Rose, Black and Green either plain or scored. It is a laminated sheet, made of asbestos fibre and Portland cement, colored with mineral pigments and finished with a polished wax surface. It is extremely flexible, for a hard wall board. Suitable for kitchens and laundries, restaurants, corridors of office buildings, or as a lining for replacing wood, plaster or sheet metal.

It is supplied in two types, "Plain" and "Scored". *Plain* Decorative Sheetflextos is furnished in sheets 4 ft. wide by 8 ft. long in 1/8" thickness only. Packed 8 sheets per package, containing 256 sq. ft. and weighing approximately 365 lbs. Colors are Buff, Rose, Black and Green. *Scored* Decorative Sheetflextos is furnished in sheets 4 ft. wide by 4 ft. long in 1/8" thickness only. Packed 10 sheets per package, containing 160 sq. ft. and weighing approximately 230 lbs. Sheets are scored in 4 in. squares and the score marks are striped in gray, with the exception of scoring on black sheets, which carry black scoring as standard. Sheets are available in Buff, Rose, Black and Green. Metal sections of aluminum are available for inside and outside corners, connector, cap and base.

COLOR RANGE OF DECORATIVE SHEETFLEXTOS

Green Buff Black Rose

K&M "Century" STANDARD SHEETFLEXTOS

K&M Standard Sheetflextos, a laminated flexible asbestos-cement sheet material of a natural light gray color, is ideal for industrial and general building use, as a fire-stop partition or an unburnable lining for ceilings and walls. Furnished in flat unscored sheets 48 in. wide by 96 in. long and 1/8 in. thick. Supplied 4 sheets per package and containing 128 sq. feet and weighing approx. 145 lbs.

K&M "Century" LINABESTOS

K&M **"Century"** Linabestos is a fire-resisting asbestos-cement board, laminated under pressure, resulting in a rigid, uniform-thick, smooth-surfaced sheet. It has a natural light buff color. Linabestos can be painted or grained for architectural effects but it must be sized before painting unless a cement paint is used.

Standard Sizes and Weights of K&M Linabestos

	Thickness	Standard Sizes	Wt. per sq. ft. Uncrated	Sheets per Crate
Plain	3/16"	48" x 96"	1.87 lbs.	14
Plain	3/16"	48" x 48"	1.87 lbs.	20
Plain	1/4"	48" x 96"	2.5 lbs.	10
Plain	1/4"	48" x 48"	2.5 lbs.	16
Plain	3/8"	48" x 96"	3.75 lbs.	7
Plain	3/8"	48" x 48"	3.75 lbs.	11
Scored	3/16"	48" x 48"	1.87 lbs.	20

Linabestos is vermin-proof and will not deteriorate, rot or rust. It is used as a fire-stop partition and as an unburnable lining for ceilings and walls. An excellent replacement for wood, plaster, or sheet metal for low cost exterior or interior sheathing for homes, industrial plants, garages and public buildings. K&M Linabestos can be applied by carpenters. It can be drilled, punched, fastened with nails and screws and sawed with a hand saw. Linabestos Battens are furnished standard in sizes 2 in., 3 in., and 4 in. width, 3/16 in. thick and 4 ft. or 8 ft. long.

Linabestos is available in two types: Plain and Scored. The scored sheets are supplied in one pattern which is 4 in. by 4 in. square block scoring to resemble tile effect, in standard size 48 in. by 48 in. only. The plain sheets are furnished in the various sizes and thicknesses as shown in table above.

Designed by Mark Sellers

Marlite

FOR CREATING BEAUTIFUL INTERIORS

MARLITE PLAIN-COLORS
MARLITE TILE-PATTERNS
MARLITE WOOD-PATTERNS
MARLITE MARBLE-PATTERNS

MARSH MOULDINGS:
EXTRUDED WHITE ALLOY
SNAP-ON STAINLESS STEEL
KALAMEIN and ROLLED METAL

MARSH BATHROOM ACCESSORIES

MARSH WALL PRODUCTS, INC. • DOVER • OHIO

THE ORGANIZATION BACK OF MARSH WALL PRODUCTS

The Marsh organization's knowledge of the building industry dates back to the retail sale of lumber and building materials in 1914, and by progressive steps to the manufacture, in their various plants, of wood registers, hardwood flooring, interior trim and high grade face brick. It is readily apparent that the development of Marlite was not an opportunist venture, as far as Marsh Wall Products, Inc. was concerned; but a logical sequence of manufacturing events brought about by a knowledgeable recognition of the present-day requirements of the building industry. The Marsh organizations, since their inception as building materials manufacturers in 1914, have consistently maintained the higher standard of quality in the products they have offered to the building trade. Materials meet specific requirements by virtue of the careful planning which precedes every Marsh product. Skilled craftsmanship, acquired through the 25 years of manufacturing, makes evident even to the critical eye the high quality maintained in this complete line of products. The exhaustive research continuously carried on in connection with all Marsh Products, in the laboratory and in the field, the development of modern and efficient manufacturing are some of the reasons why Marsh Wall Products have an enviable reputation for their quality and dependability.

GENUINE *Marlite*

Genuine Marlite is manufactured only by Marsh Wall Products, Inc. The exclusive processing insures distinctive products of real merit and salability. The accumulated manufacturing experience of 25 years and the entire facilities of Marsh organizations are reflected in the value offered in Marlite, and other Marsh Products. Marlite has become well known and favorably accepted as the *de luxe prefinished wall material of a thousand uses.* No other similar material has such versatile application with its extensive range of colors and patterns . . . its large selection of sizes . . . its wide variety of accessories.

ADVANTAGES OF *Marlite*

BEAUTIFUL AND SANITARY

Marlite has a smooth, polished surface which reflects beauty. These smooth surfaces resist acids and alkalies, insuring a stainproof wall that will endure and remain beautiful for many years. The very nature of this hard, polished surface simplifies cleaning and provides a sanitary wall.

EASY TO KEEP CLEAN

A few minutes spent in wiping the glass-smooth surface of Marlite with a damp cloth will keep it spick and span. The time saved in keeping Marlite walls clean reduces maintenance costs.

WALL-SIZE PANELS

The large wall-size panels of Marlite make modernizing economical . . . for the average wall can be covered from corner to corner with one sheet. All colors and patterns of Marlite are sold in large sheets 4′ wide and in lengths ranging from 4′ to 12′.

EASY TO INSTALL

The large sheets of Marlite are easily cut to the proper size pieces with regular carpenter tools. These pieces can be quickly fitted and installed by any good carpenter. Marlite is applied over plaster, plywood, insulation board, wall board or walls of any similar material that are straight and dry.

WIDE RANGE OF COLORS AND PATTERNS

The 63 colors and patterns permit innumerable decorative schemes.

NATIONAL DISTRIBUTION

Marlite and other Marsh Wall Products are distributed by lumber and building supply dealers in 3,000 communities throughout the United States. Direct factory representatives are located in principal metropolitan areas. Dealers and factory representatives will be glad to estimate your requirements without obligation.

Marlite FOR CREATING BEAUTIFUL INTERIORS

Registered U. S. Patent Office

WHAT IS MARLITE? . . . Basically, this product is treated Tempered Presdwood to which a hard but flexible synthetic glazed surface is permanently integrated. The highly glazed surface is beautifully finished by an exclusive treatment which completely seals the pores so that moisture and dirt cannot penetrate. Acids, alkalies and non-abrasive cleaning compounds are repelled—insuring a stain-proof, easy-to-clean surface which will retain its appearance for years. Marlite colors and patterns are 5/32″ thick. Marlite wood-veneers are 1/4″ thick.

Marlite PLAIN-COLORS

The bathroom illustrated on the cover exemplifies the artistic results that can be attained with plain-colors. Here is created an atmosphere of spaciousness and complete color harmony of walls and accessories, at an attractive cost. . . . Marlite plain-colors are meeting with unusual acclaim among architects and designers who influence the modern trends. Large panels in a wide range of colors (shown on the back cover) provide an infinite variety of effects that will conform with contemporary styles. These features have built up records of dependability for Marlite as an effective decorative medium in all fields of merchandising.

STANDARD PLAIN-COLORS

Black	Lemon Yellow	Jade Green	Pompeian Red	Skyblue	Orchid
White	G. E. Yellow	Pheasant Green	Persian Red	Robin-egg Blue	Peach
Cream	Canary Yellow	Apple Green	Cafe au lait	Mediterranean Blue	Silver
Ivory	Dove Gray	Forest Green	Burnt Umber	Royal Blue	Gold

MARSH BEND-BOARD

This is a special material for arches, bends, columns and curves whose diameters are from 1′-6″ to 4′-6″. Marlite is rigid, whereas Bend-Board has the flexibility required so that it may be formed to small curves. For bends greater than 4′-6″ in diameter, the standard 5/32″ Marlite should be used. Marsh Bend-Board is 1/16″ thick.

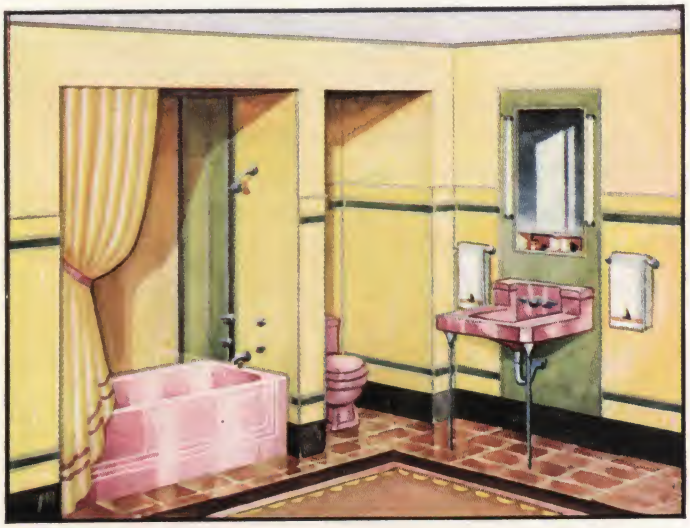
Marlite TILE-PATTERNS

Marlite tile-pattern is the ideal material for sanitary walls where tile-effects are desired. It is impervious to ordinary acids and fruit juice stains. The smooth surface makes it easy to keep clean and long retain its original glistening luster. Marlite tile-pattern surface is an improvement which has been eagerly welcomed because it provides striking new smartness for wall decoration. The new patented roll edge tile-marking is an exclusive feature of Marlite tile-patterns that provides uniform thickness of coating to assure against peeling at this vital point (see detail page 5). There is practically no limit to the number of decorative effects which may be created by using combinations of plain-colors and tile-patterns.

STANDARD TILE-PATTERNS

Color	Tile-marking	Color	Tile-marking	Color	Tile-marking	Color	Tile-marking
White	Gray	Cream	White	Robin-egg Blue	Ivory	Pheasant Green	Ivory
White	Black	Cream	Apple Green	Dove Gray	Ivory	Jade Green	Forest Green
White	Persian Red	Cream	Gray	Orchid	Gray	Jade Green	Ivory
Ivory	Gray	Black	Ivory	Orchid	Ivory	Lemon Yellow	White
Ivory	Black	Black	White	Mediterranean Blue	Gray	Lemon Yellow	Black
Peach	Ivory	Black	Gray	Skyblue	White	Royal Blue	White

BATHROOM *walls in Canary Yellow and Forest Green, as conceived by the Marsh Department of Design, illustrate one of many beautiful effects possible by the use of Marlite.*



Marlite
Registered U. S. Patent Office

PLAIN-COLORS AND TILE-PATTERNS

Marlite has a smooth, polished surface which reflects beauty. These smooth surfaces resist acids and alkalies, insuring a stainproof wall that will endure for many years. The very nature of this hard, polished surface simplifies cleaning and provides a sanitary wall. The many colors and patterns of Marlite give unlimited possibilities for decorative schemes. This wide selection of color, together with the versatility of the material itself, makes interior decoration a pleasure. The various materials come in large wall-size panels that can be easily applied over existing walls or new walls by a competent carpenter.

USES . . . Marlite plain-colors and tile-patterns have a wide variety of uses, and are highly desirable for wall treatments in kitchens, bathrooms, lavatories, breakfast nooks, dairy stores, cocktail lounges, food stores, drug stores, night clubs, reception lobbies, barber shops, lubritoriums, hospitals, funeral homes, bake shops, restaurants and displays. Also for counters, meat cases, meat coolers, soda fountains and back bars.

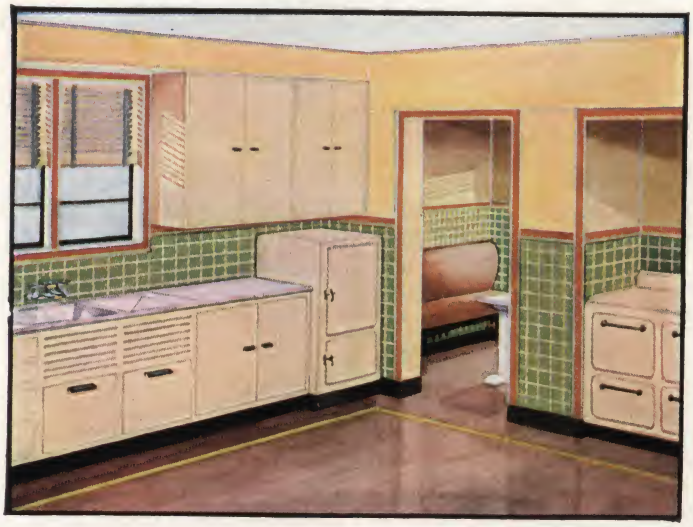
SIZES . . . Marlite plain-colors and tile-patterns are available in panels 4′ x 4′, 4′ x 5′, 4′ x 6′, 4′ x 7′, 4′ x 8′, 4′ x 10′ and 4′ x 12′. Standard panels are 5/32″ thick. Plain-colors are also available in Marsh Bend-Board in panels 2′ x 4′, 4′ x 4′ and 4′ x 6′, which are 1/16″ thick. Standard tile-pattern markings are 4″x4″. Panels of Marlite tile-pattern with tile-markings 8″x8″, 8″x12″, 12″x12″ and 16″x16″ may be had on special order.

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

NIGHT CLUB *Jack Dempsey Restaurant, New York City. Eastman Decorators, Louis Brooks, Arch.*

KITCHEN *Walls like these of Marlite are clean and sanitary.*

LOBBY *Way-side Inn, West Springfield, Mass. Designed by W. E. Robinson Patrick.*



KITCHENS ... *Utility and beauty characterize this kitchen in which is shown a practical combination of Marlite Tile-Pattern and Plain-Color as conceived by the Marsh Department of Design.*

New
EXCLUSIVE TILE-PATTERN

U. S. Patent No. 2,137,896

One of the most far-reaching improvements in the manufacture of tile-pattern sheets was recently developed by the engineering department of Marsh Wall Products, Inc. The score lines have rolled edges which permit the finishing materials to build uniformly over the surface of the entire sheet as illustrated at the right. In addition to producing a very durable product, this new exclusive score line creates an unusually attractive tile-effect . . . an exclusive feature of Marlite tile-pattern.

LUBRITORIUM *Gulf Refining Co. Columbus, Ohio*

BARBER SHOP *Mahool Barber Shop Ithaca, New York*

MORTUARY *Preparation room in Funeral Home, Newark, Ohio.*

RECEPTION LOBBY *of the Way-side Inn at West Springfield, Mass., has horizontal paneling of Marlite Italian Olive Wood-Pattern as designed by W. E. Robinson Patrick. These wood-patterns are available in sheets as large as 4′ x 12′, a feature which is welcomed by contemporary designers. The wood graining is reproduced photographically in true colors, eliminating the expense and inconvenience of finishing.*

OFFICE *. . . Here is a very attractive application of Marlite Wood-Patterns. The panels are backed with insulation board which is applied direct to the studding. The joints are concealed with Marsh Snap-on Stainless Steel Mouldings. Mark Seibert, designer.*

AVODIRE

SATINWOOD

ITALIAN OLIVE

ENGLISH HA

Marlite WOOD-VENEERS

Registered U. S. Patent Office *Manufactured under U. S. Patent No. 2,137,896*

Wood-Veneer is the most recently developed Marlite product. It consists of actual wood flitches securely bonded to Masonite Deluxe Quarterboard base with waterproof resin adhesive, fused under high temperature and tremendous pressure, assuring a uniform flat panel that will not blister and that has a high resistance to moisture. The flitches for Marlite wood-veneers are carefully selected from high quality rare woods, laid and matched by skilled craftsmen. Panels are ¼" thick and can be applied over existing walls or direct to studding. Thus modern scientific production methods have again emerged to provide an outstanding wall material combining structural strength with the age old beauty of wood. Marlite wood-veneers are sent on the job completely finished ready to apply or in finished panels, thus avoiding the muss and odor of finishing materials.

USES . . . Marlite wood-veneers and wood-patterns are unusually attractive for commercial interiors, such as offices of all kinds, night clubs, bars, back bars, elevator cabs, hotel dining rooms, beauty parlors, stores, shops, window backgrounds, counter fronts and displays. Also in homes for libraries, dining rooms, dens, kitchens and living rooms.

VENEERS . . . Marlite wood-veneers are available in the following grains: avodire, bubinga, capomo, lacewood, plain mahogany, rift white oak, quartered white oak, plain and figured Oriental, medium figured paldao, quartered prima vera, sapeli, plain satinwood, plain and figured walnut, zebrawood and other rare woods.

SIZES . . . Standard panels of Marlite wood-veneers are 4'x6', 4'x8' and 4'x12' with the grain running the long way of the panels. Panels are ¼" thick. Other sizes can be furnished on special order. Wood grain running the 4' way on panels can be had on special order. Wood-veneers for bending can be furnished on special order ⅛" and 1/10" thick.

Marlite WOOD-PATTERNS

Marlite wood-pattern provides the richness of rare wood grains reproduced in natural colors. It is identical in physical properties with Marlite plain-colors and marble-patterns, which are prefinished ready for use. It resists moisture, acids and alkalies, providing a surface that is easy to keep clean with a damp cloth. The large panels of Marlite wood-patterns make possible an endless variety of wall treatments. The flexibility of Marsh Bend-Board is a welcome achievement for arches, bends and curves. Creative designers are quick to recognize the value of this feature in executing their ideas. It gives them a new freedom of form. Types of work for which Marlite wood-patterns can be used are listed above. All Marlite wood-patterns are illustrated below.

SIZES . . . The smallest panel is 32"x48", with grain running the 48" way. Larger panels available are in multiples of this size. They are: 32"x96" and 32"x144", grain running the 96" and 144" ways respectively, also, 48"x64", 48"x96" and 48"x144", with the grain running the 48" way. Bend-Board, designed for pleasing curves of 9" to 27" radii, is available in panels 48"x32" and 48"x64".

Marsh Wall Products, Inc., reserves the right to change the standard colors or patterns at any time.

FRENCH WALNUT

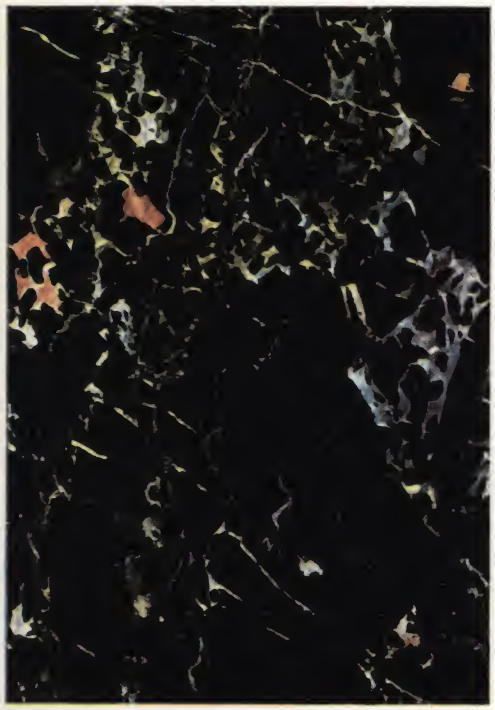
MAHOGANY

AMERICAN Straight Grain WALNUT

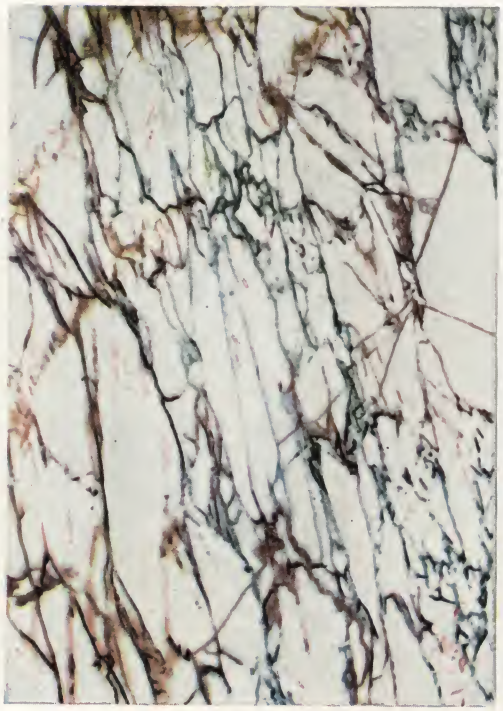
CORRIDORS *in buildings that need renovizing will have an air of dignity when Marlite Marble-Patterns are used to recondition the walls. The corridor above of the Pan-American Life Insurance Co., Arrot Building, Pittsburgh, Pa., was remodeled by applying Marlite Marble-Pattern over the existing plaster walls. The walls of their executive offices were reconditioned with Marlite Wood-Patterns. Paul Richard Scheuneman, the architect for the above work, and many other prominent architects are recognizing the need for these new materials in the rehabilitation of obsolete buildings.*

DISPLAY . . . *Men who build displays welcome the use of Marsh Bend Board for curved surfaces. All finishes are available in this new, flexible board which has a durable glazed surface. Display shown at Great Lakes Exposition*

BLACK AND GOLD



SKYROS



VERDI ANTIQUE

Marlite MARBLE-PATTERNS

Registered U. S. Patent Office

In Marlite marble-patterns all the beauty and dignity with which nature has invested the original specimens of rare stone is preserved in all its richness of color and wondrous grain pattern. Excepting for the marble itself, there is no material that more truly provides the realism of beautifully polished marble than does Marlite in marble-patterns. Only by the closest of inspection is it possible to discover that it actually isn't marble. Marlite's glass-smooth surface, like that of the rare marble specimens from which these patterns have been recreated with flawless fidelity, is non-porous, extremely durable, and needs only to be wiped over with a damp cloth to keep it lustrous and beautiful year after year. Marlite in marble-patterns can be applied right over present walls by any good carpenter, and is as desirable for new construction as for the renovation of interiors of existing buildings. For arches, bends and curves, Marlite marble-patterns in Marsh Bend-Board provide a freedom in interior design and modernizing that appeals to contemporary designers. Marsh presdwood mouldings are made in many styles to match all marble-patterns as illustrated on page 11.

USES . . . Marlite, with its variety of marble-patterns, has a wide range of uses. Some of the ideal uses are listed here: hotel lobbies, theatre foyers, building corridors, building and loan offices, department stores, soda fountains, dairy bars, barber shops, beauty salons, powder rooms, bathrooms, lavatories, vestibules, hospitals, churches, displays, altars and mortuaries. The inviting appeal of Marlite marble-patterns is illustrated in the accompanying photographs of actual installations. Representative sections of marble-patterns are illustrated below.

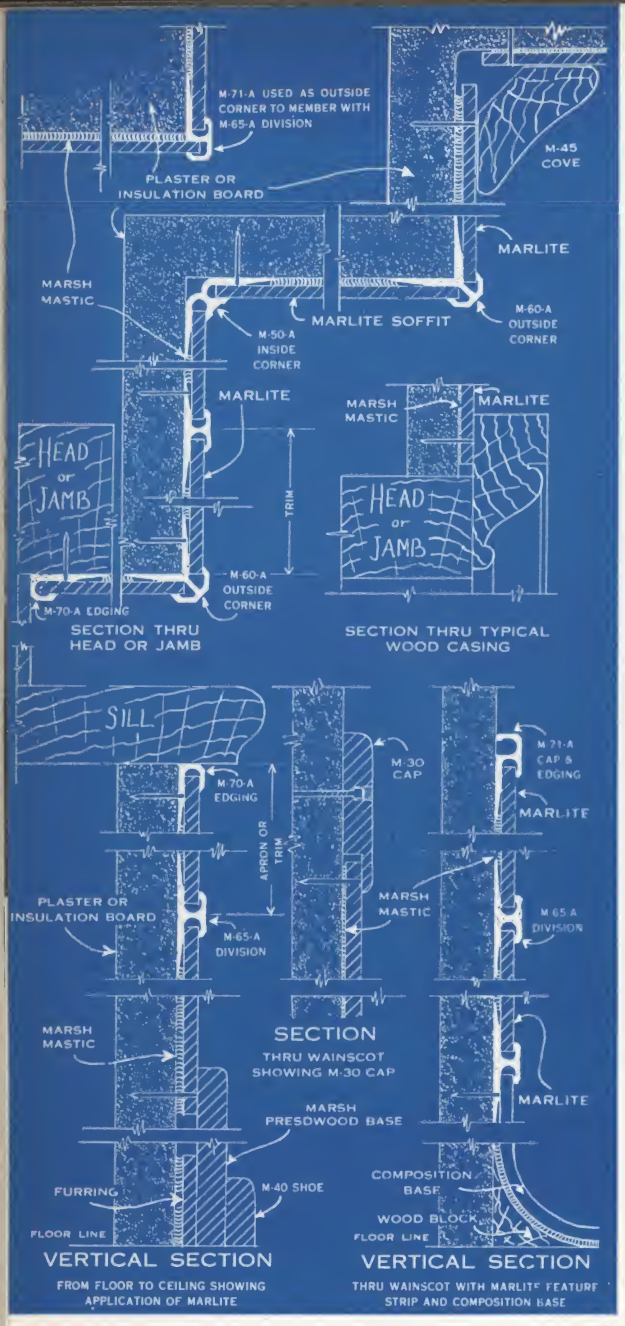
SIZES . . . Marlite marble-patterns in panels of ceiling height and in widths of 4′ permit large wall areas with a minimum of joints. Standard sizes are 32″ x 48″, grain running the 48″ way, which is the smallest size (10⅔ sq. feet per sheet). Larger panels available are in multiples of this size. They are 32″ x 96″ and 32″ x 144″, grain running the 96″ and 144″ ways respectively, also, 48″ x 64″, 48″ x 96″ and 48″ x 144″ with the grain running the 48″ way. Marsh Bend-Board, designed for pleasing curves of 9″ to 27″ radii, is available in panels 48″ x 32″ and 48″ x 64″.

Marsh Wall Products, Inc., Dover, Ohio, reserves the right to change the standard colors or patterns at any time.

ROSE DE BRIGNOLES

BRECHE ROSE

JAUNE BENOU



SHORT FORM *Specifications*

On all walls as indicated on the plans and/or as called for in the specifications supply Marlite wall covering as manufactured by the Marsh Wall Products, Inc., Dover, Ohio. ***INSTALLATION*** . . . Marlite and accessories shall be installed according to current printed instructions furnished by the manufacturer. ***WORKMANSHIP*** . . . All work shall be executed in a skilled, workmanlike manner to satisfactorily meet the provisions of these specifications.

PREPARATION OF WALLS

GENERAL CONDITIONS . . . Walls that are provided to receive Marlite shall be dry and constructed in such manner that there will be no sweating or seepage of moisture through walls from the back to the surface. ***NEW WALLS*** . . . Plaster walls shall be finished white coat plaster or hard brown coat troweled smooth (not sand finish). Plaster shall be thoroughly dry before Marlite is applied. Walls shall be straight. Where plaster is applied to hollow tile or masonry walls, furring strips shall be provided at points where nailing is required to hold mouldings in place. ***WALLBOARD*** . . . Masonite insulation board, plaster board, plywood, or similar wallboard material shall be erected on rigid studding to provide a straight wall for the erection of Marlite. ***OLD WALLS*** . . . Preparation of old walls: Loose, scaly paint, cold water paint, or wall paper which may become loose, shall be removed. Gloss painted and smooth enameled surfaces are satisfactory for application of Marlite. Walls shall be free from moisture, dust or other substances which will affect the adhesion of mastic cement.

MARLITE PLAIN-COLORS

Wall covering shall be 1/8" tempered presdwood prefinished with resinous material to give it a hard, smooth, durable surface that will be waterproof, dirtproof and easy to clean, as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The decorative scheme shall be of (state color combination) as indicated on elevation drawings. Panels shall be of maximum size to make entire installation with a minimum of joints.

MARLITE TILE-PATTERN

Wall covering shall be 1/8" tempered presdwood prefinished with resinous material to give it a hard, smooth, durable surface that will be waterproof, dirtproof and easy to clean and have a tile-pattern with tile markings 3 3/4" on center and with edges of tile-pattern rounded as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The color shall be (state color) with tile-pattern markings in (state color).

MARLITE WOOD-PATTERN

Wall covering shall be 1/8" tempered presdwood prefinished with resinous material to give it a hard, smooth, durable surface that will be waterproof, dirtproof and easy to clean and shall have true photographic reproduction of wood as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The decorative scheme shall be of (state wood-pattern) with grain running vertically or horizontally as indicated on elevation drawing. Panels shall be of maximum sizes to make entire installation with a minimum of joints.

MARLITE MARBLE-PATTERNS

Wall covering shall be 1/8" tempered presdwood prefinished with resinous material to give it a hard, smooth, durable surface that will be waterproof, dirtproof and easy to clean and shall have true photographic reproduction of marble as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The decorative scheme shall be of (state marble-pattern) with grain running vertically or horizontally as indicated on elevation drawings. Panels shall be of maximum size to make entire installation with a minimum of joints.

MARSH WATERPROOF MASTIC

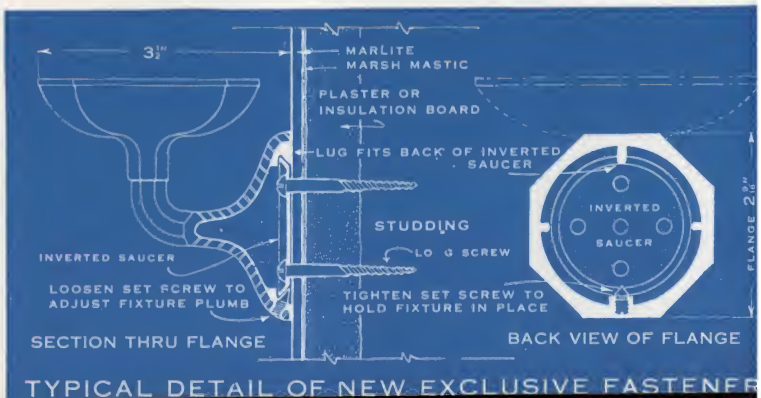
Marlite and Marsh Presdwood mouldings shall be held securely to walls at all points with Marsh *Waterproof* Mastic, the authorized adhesive recommended by Marsh Wall Products, Inc., Dover, Ohio. Adhesive shall be applied in accordance with *current printed instructions* furnished by the manufacturer.

MARSH BATHROOM ACCESSORIES

Bathroom Accessories shall be die cast non-rusting metal, polished smooth and electroplated; first with copper, then with nickel and finally with heavy chromium as manufactured by the Marsh Wall Products, Inc., Dover, Ohio. The contractor shall furnish and install typical octagonal design bathroom accessories as indicated on drawings or listed in these specifications.

MARSH BATHROOM ACCESSORIES ARE PRODUCED BY THE DIE CASTING PROCESS

The die casting process produces a much closer grained metal than obtainable by sand casting, permitting sharper lines and polishing to a higher finish. The result is a fixture of beauty, durability and strength. ***RECESS FIXTURES*** (not illustrated) . . . By the die casting process all flanges of recess fixtures become an integral part of the curved shell, eliminating all possibility of open joints between the flange and body of the fixture. Recess fixtures can be built into the wall by preparing a place for them before Marlite is applied. They are held in place by key blocks and plaster paris.



MARSH MOULDINGS

Marlite is supplemented with a complete line of mouldings that will fill every decorative need. Somewhere in this complete line will be found a moulding to fill your requirement, whether it be straight lines, curves or angles. Marsh Mouldings meet specific requirements by virtue of the careful planning which precedes every Marsh product. All mouldings are designed to member into each other. Skilled craftsmanship acquired through 25 years of manufacturing makes evident even to the critical eye the high quality maintained in this complete line of mouldings. The following are short form specifications for the various types of mouldings.

MARSH SNAP-ON STAINLESS STEEL MOULDINGS

Edging, division, inside corners and outside corner mouldings shall have stainless steel shell that will snap-on to a metal track for concealed fastening, as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The designs and shapes shall be as indicated on details (or elevation drawings). Mouldings shall be of maximum standard lengths to keep joints at a minimum.

MARSH EXTRUDED WHITE ALLOY MOULDINGS

Edging, division, inside corner and outside corner mouldings shall have concealed flanges for fastening and be extruded of aluminum white alloy 53-ST-5, heat treated and highly polished, as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The designs and shapes shall be as indicated on the details (or elevations). Mouldings shall be of maximum lengths to keep joints at a minimum.

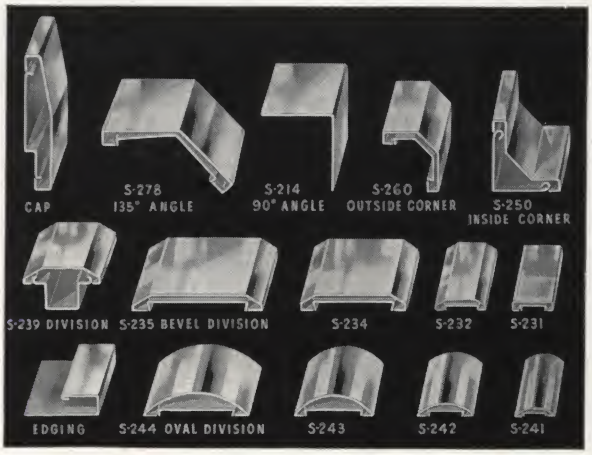
MARSH PRESDWOOD MOULDINGS

Presdwood Mouldings shall be $\frac{5}{16}$" tempered presdwood prefinished with resinous material to give them a hard, smooth, durable surface that will be waterproof, dirtproof and easy to clean as manufactured by Marsh Wall Products, Inc., Dover, Ohio. They shall be of designs indicated on details (or elevations) and of maximum standard lengths to keep joints at a minimum. The color shall be (state color).

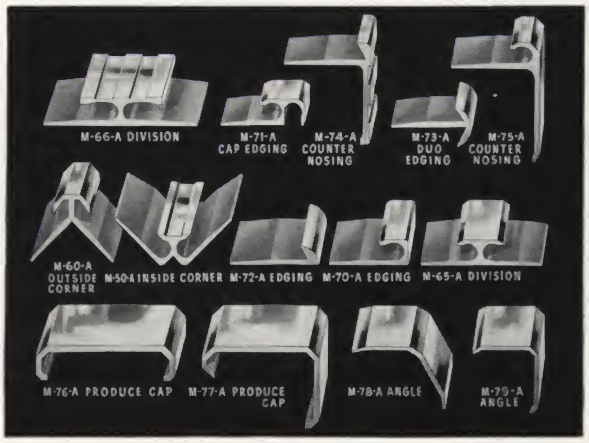
MARSH KALAMEIN MOULDINGS

Decorative mouldings shall be Kalamein (metal covered wood) chromium plated zinc as manufactured by Marsh Wall Products, Inc., Dover, Ohio. The designs and shapes shall be as shown on details (or elevations). Mouldings shall be supplied in 8′ lengths.

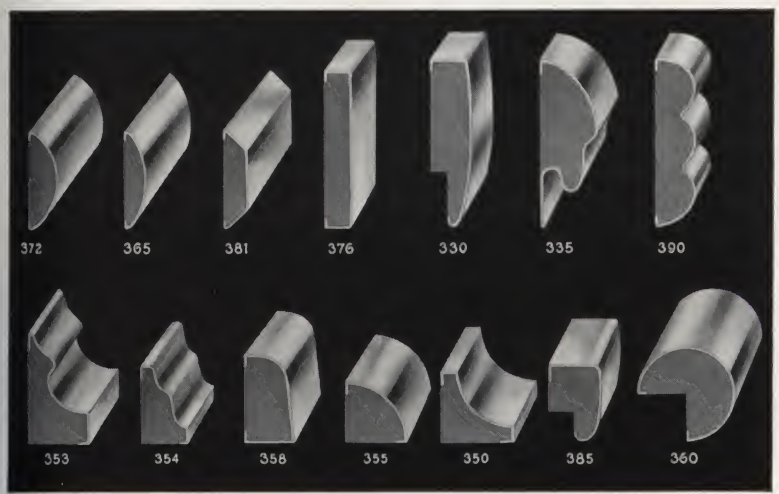
Call Representative or Write to Factory
for Complete Marsh Moulding Catalog



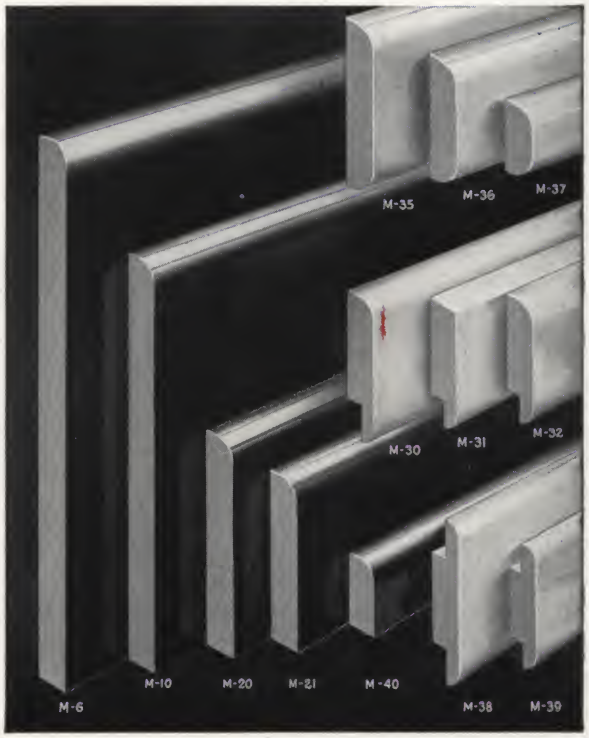
MARSH SNAP-ON STAINLESS STEEL



MARSH EXTRUDED WHITE ALLOY



MARSH KALAMEIN

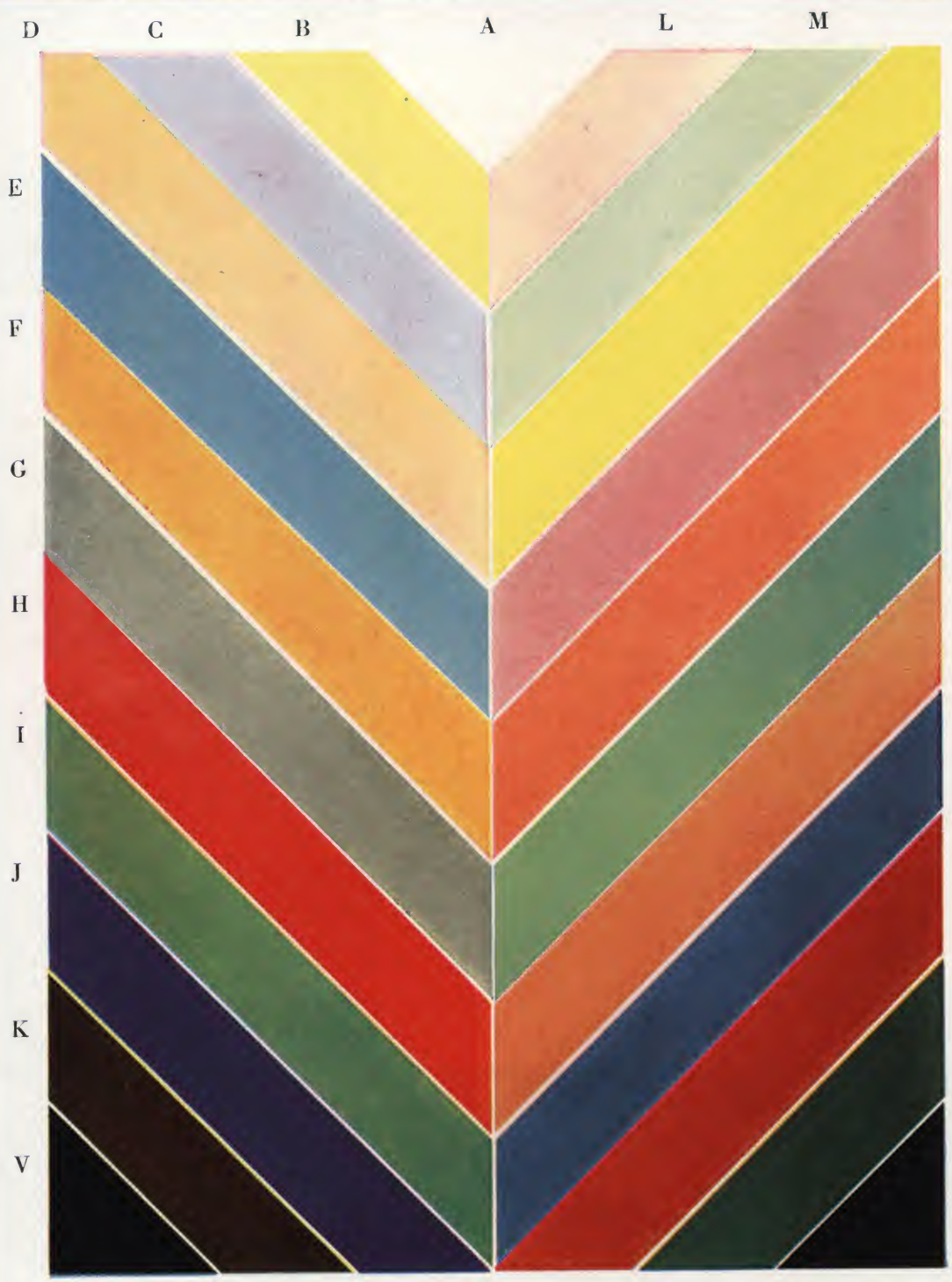


MARSH PRESDWOOD MOULDINGS

MOULDINGS ARE ILLUSTRATED APPROXIMATELY HALF ACTUAL SIZE

FORM 1116 SWEET'S-21-M

Marlite COLORS



Color Photography

*Color photography has been employed to reproduce these colors. They match as closely as it is possible to match by four color printing. All colors shown are standard Marlite plain-colors. Also available in gold, silver and copper. The colors identified with an * are standard tile-pattern colors. See page 3 for complete list of Marlite tile-patterns. Other colors made on special order.*

A White*
B Lemon Yellow*
C Skyblue*
D Ivory*
E Robin-egg Blue*
F G. E. Yellow
G Dove Gray*
H Pompeian Red
I Apple Green
J Royal Blue*
K Burnt Umber
L Cream*
M Jade Green*
N Canary Yellow
O Orchid*
P Peach*
Q Pheasant Green*
R Cafe au lait
S Mediterranean Blue*
T Persian Red
U Forest Green
V Black*

MARSH WALL PRODUCTS, INC. DOVER, OHIO

Printed in U.

THE RUBEROID CO.

Manufacturers of "Newtile" and "Newmarble" Asbestos Panels, Simulating Tiling and Marble in Sheet Form

EXECUTIVE OFFICES
500 Fifth Avenue, NEW YORK, N. Y.

DIVISIONAL OFFICES
NEW YORK CHICAGO BOSTON (MILLIS) ERIE BALTIMORE MOBILE MINNEAPOLIS

PRODUCTS

"Newtile" Asbestos Tiling in sheet form.

"Newmarble" Asbestos Panels simulating marble.

For other Asbestos-cement products made by The Ruberoid Co., see File Index.

"NEWTILE"

Wherever walls can be tiled—in every home or business building—architects and builders are specifying the use of "Newtile" for smart ceramic effects. Its gleaming beauty and its long-wearing, water- and fire-resisting qualities make it an eminently satisfactory product, particularly where economy is desirable.

The "Newtile" base is a strong, rigid sheet of asbestos. This is finished with a hard, highly polished surface closely resembling ceramic tile. Scoring at 4-in. intervals perfectly reproduces the effect of 4-in. square tiles even to the appearance of natural mortar joints.

It is easy to saw, plane and drill. Nails may be driven without fear of fracture.

The surface of "Newtile" is non-absorbent and repels dirt so completely that an occasional wiping with a damp cloth or washing with soap and water will restore its original brilliant lustre at once.

Attractive Kitchen Installation of "Newtile" in Private Residence

Colors

"Newtile" is furnished in white and three pastel shades—green, blue and cream; also black and Spanish (Mottled Buff). These colors were selected for their ability to blend with practically any color scheme. "Newtile" base and cap are also made in the same colors. "Newtile" is available with scorelines in natural gray or painted to give contrast with the tile.

How Furnished

"Newtile" is furnished in sheets, base and cap in the following sizes:

Sheets: 32 x 48 in., $\frac{3}{16}$ in. thick.
Base: 4 or 6 in. wide, 48 in. long, $\frac{5}{8}$ in. thick.
Cap: 2 in. wide, 48 in. long, $\frac{5}{8}$ in. thick.

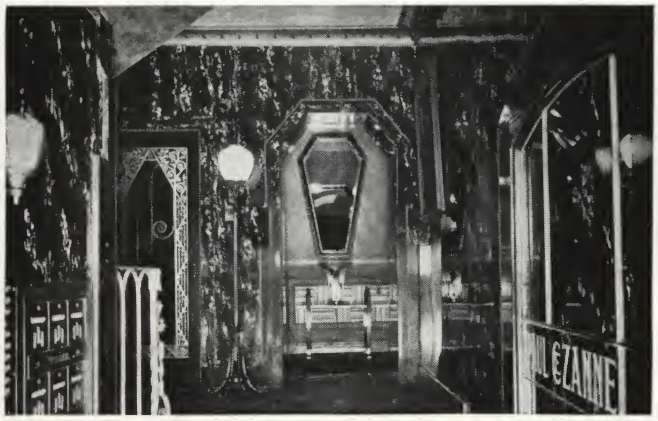
Installation

For instructions in cutting and installing "Newtile" write any office of the The Ruberoid Co. Full application details are packed in every crate.

69J

"NEWMARBLE"

"Newmarble" is made from asbestos and cement in panel form with a beautiful and lustrous finish that simulates marble. It is fire- and weather-resisting; durable, sanitary, easy to keep clean and may be quickly installed by any mechanic. Its lovely, colorful surface; depth of finish; long life and surprising economy qualify it for the many purposes where the use of marble is indicated. Light in weight, approximately 2 lbs. to the sq. ft., it may be used where real marble would not be desirable on account of weight and bulk.



Attractive Foyer Cezanne Apartments, Kansas City, Mo.—Furnished in Black and Gold "Newmarble"

Uses

Architects have found an almost unlimited field of adaptations for "Newmarble." A few of the classes of installations rapidly gaining favor are:

(1) Apartment house foyers. (2) Theatre lobbies. (3) Office building lobbies and hallways. (4) Hospitals. (5) Department stores.

Colors

"Newmarble" is made in the following attractive colors: Black and Gold, Light Italian, French Black and White, Verde Antique (Green), African Black and White, Belgian Black. For interior use only: Spanish Rose and Chinese Red.

How Furnished

"Newmarble" Standard Panels—regularly furnished in panels, size 32x48 in., $\frac{3}{16}$ in. thick.

"Newmarble" Trim

For effective results "Newmarble" trim should be used wherever trim is necessary. Striking and harmonious effects can be produced by the use of trim different in color from the panels.

Cap moulding and base are made in all "Newmarble" finishes, the standard stock widths being 4 and 6 in., respectively. One edge rabbeted to receive the panels. Length 48 in.

Installation

For instructions in cutting and installing "Newmarble," write any office of The Ruberoid Co. Full application details are packed in every crate.

UNITED STATES PLYWOOD CORPORATION

103 Park Avenue, NEW YORK, N. Y.

For Branch Offices, see pages on Plywood
For Plywood and Allied Products, see File Index

Flexwood

Reg. U. S. Pat. Off. Patent No. 1819775

EXOTIC WOODS IN FACILE FORM

Flexwood is genuine wood veneer cut to 1/85 of an inch, glued under heat and hydraulic pressure to cotton sheeting with a waterproof adhesive. A patented flexing operation alters the cellular unity of the wood to produce a limp, pliable sheet which may be applied by hand to any smooth surface, flat or curved. Waterproof Flexwood cement, which makes a permanent bond, is used to apply *Flexwood*. Standard sizes of stock material are 18 and 24-in. widths and 8 and 10-ft. lengths.

Dry plaster, steel, Fir Plywood, hard wallboards, tile, marble, asbestos, glass, etc., make perfect backgrounds for *Flexwood* treatment. Sheets may be hung horizontally or vertically for modern sheer wall treatments or for Georgian or classical panel designs. Inlays and murals are produced by combining various woods.

Columns, round or square, can be completely wrapped with *Flexwood*. Sharp corners and fluted pilasters are treated as easily as plane surfaces.

Mechanics of installation are simple. The background is sized with *Flexwood* cement. Another coating of cement is brushed on the *Flexwood* which is then hung in the manner of any sheet wall covering. A stiff broadknife, used with considerable pressure, smooths out the *Flexwood,* removes air spaces and furnishes the necessary contact. Any skilled paperhanger can do a perfect job by following printed instructions.

Flexwood, because it is wood, takes any wood finish.

Flexwood in the hands of the designer is a tool as essential as metal, paint or glass for creating modern effects. Its uses are limited only by the ingenuity of the designer.

Flexwood meets every decorative requirement in the field of homes, offices and institutions. When the luxury obtainable only with genuine wood treatment is desired and economy and time are imperative, *Flexwood* is the answer.

The Definite Economy of *Flexwood* interiors is particularly emphasized in sheer wall treatment and when it is used in buildings governed by city fire ordinances.

Rare and Exotic Woods from all corners of the earth are available in *Flexwood,* making it possible to create and execute distinctive interiors in from 25% to 50% of the time normally required. Wood selections can be made from actual flitch samples. Distributors are located in sixty principal cities.

Some of the woods available in *Flexwood* are:

Mahogany	Satinwood	English Oak	Cherry
Walnut	Zebrawood	Maple	Pearwood
Oak	Harewood	Avodire	Burma Teak
Prima Vera	Macassar Ebony	Lacewood	Black Birdseye
Knotty Pine	Redwood Burl	Claro Walnut	Cypress
Orientalwood	Rosewood	Aspen	Bubinga
			Sapeli

Permanent exhibits maintained at Architects Samples Corp., 101 Park Ave., and PEDAC, 30 Rockefeller Plaza, N. Y. C.

Manufactured and marketed jointly by The Mengel Co. of Louisville, Ky., and the UNITED STATES PLYWOOD CORPORATION.

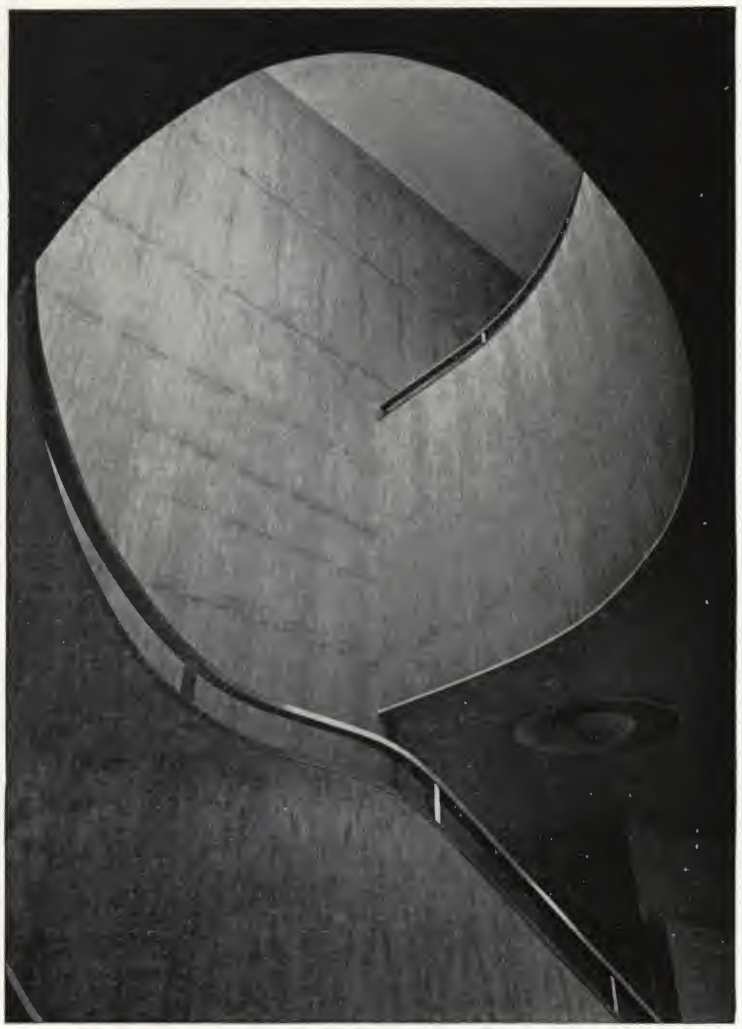


Photo: Samuel H. Gottscho

View of the Magnificent 32-foot Stairway in American Radiator Building, New York, N. Y.

J. ANDRÉ FOUILHOUX, Architect

Its simplicity and grace, and the rich appeal of 2000 ft. of Teakwood *Flexwood* used for flush decoration of the flat and curved wall areas make it an outstanding example of design trend

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

EAST PITTSBURGH, PA.

For Branch Offices see File Index for Westinghouse Catalog on Motors

MICARTA

A New Decorative Vehicle to Interpret the Finest Expressions of Color, Beauty and Restful Charm

Decorative Micarta for Entrance, Bar and Table Tops

For New Living Room Beauty, Character and Effect

For Table Tops and Decorative Paneling

To Rehabilitate the Bathroom, Conventionally or Ultra-modern

For Hotel Furniture Tops, Where Service Is Required

Now . . . for the first time . . . Decorative Micarta gives full sway to the architect's vision with a completely new line of solid colors. Twenty-two clear, vivid tones . . . any two of which may be combined in full harmony or complete contrast . . . opening new vistas of color combination to the decorative arts.

For the first time, Westinghouse brings not only new colors, but two new finishes in Decorative Micarta. A brilliantly vivid glossy finish, mirroring every catchlight and shadow . . . and a new soft satin finish — a velvety sheen that creates a soft, restful color impression. Because of the virtually endless combinations and uses for Decorative Micarta, it lends itself ideally to smarter motifs. When combined with its extremely practical features . . . long life, desirability, moisture-resistance, ease of cleaning, and mar-proof surfacing . . . Micarta's value to the architect is doubled.

Be Sure To Get Your Copy of the New Decorative Micarta Portfolio for Architects

DECORATIVE MICARTA

WOOD DESIGNS

(ONE-THIRD ACTUAL SIZE)

845
Curly Maple

838
Walnut Light Burl

847
White Oak

804
Walnut Dark Burl

830
Walnut Light
Straight Grain

801
Mahogany Dark Red
Straight Grain

835
Walnut Dark Semi-
Straight Grain

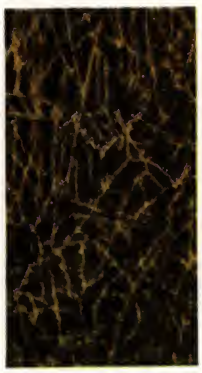
805
Walnut Dark
Straight Grain

843
Mahogany Dark Brown
Straight Grain

MARBLE DESIGNS

(ONE-THIRD ACTUAL SIZE)

834
Black and Gold



829
Gold Web

860
Bianco Chiaro

858
Cardiff Green

857
Verdi Antique

874
Black and Green

SOLID COLORS

887
Cerulean Blue

896
Emerald Green

881
Lemon Yellow

890
Bisque

888
Turquoise Blue

856
White

899
Viridian

882
Cadmium Yellow

894
Chinese Red

891
Burnt Umber

886
Peacock Blue

893
Neutral Grey

889
Chrome Green

883
Cadmium Orange

885
Velvet Red

892
Van Dyke Brown

898
Prussian Blue

836
Black

897
Hooker's Green

884
Chrome Orange

895
Carmine Red

880
Madder Brown

WESTINGHOUSE ELECTRIC & MFG. COMPANY

MICARTA'S DECORATIVE APPLICATIONS ARE PRACTICALLY LIMITLESS

For the Utmost in Utility and Beauty in the Home

Smart, Lustrous Paneling, Easy to Clean and Keep Clean

Unmarred by Smoldering Cigarettes and Spilled Liquors

For Restaurant Counter Tops and Long Service

Colorful, Durable Counters, Tops and Wall Paneling

PLUS A NATURAL WOOD FINISH

Now another finish — Durawood Micarta — combining all of the fine lasting qualities of Micarta with the warmth and beauty of natural wood.

Durawood Micarta embraces a wide range of genuine wood grains . . . warm, vibrant, even thrilling. Designed for the architect whose clients demand the luxurious, full bodied genuineness of wood veneer . . . plus all the physical advantages of Micarta.

ASK THESE DISTRIBUTORS FOR YOUR COPY OF THE ARCHITECT'S PORTFOLIO, S.A. 390

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Cincinnati, Ohio
U. S. Plywood Corp.
634 Eden Park Entrance

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U. S. Plywood Corp.
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1930 E. 15th Street

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616 W. 46th Street

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Plastiform Products Co.
1944 Adeline Street

Newark, N. J.
U. S. Plywood Corp.
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Philadelphia, Pa.
U. S. Plywood Corp.
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Rochester, N. Y.
U. S. Plywood Corp.
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148 Carroll Street

Salt Lake City, Utah
Morrison-Merrill Co.
3rd West and 1st North Streets

Seattle, Wash.
Raecolith Flooring Co.
2 Hanford Street

Somerville, Mass.
U. S. Plywood Corp.
61 McGrath Highway

SECTION 11

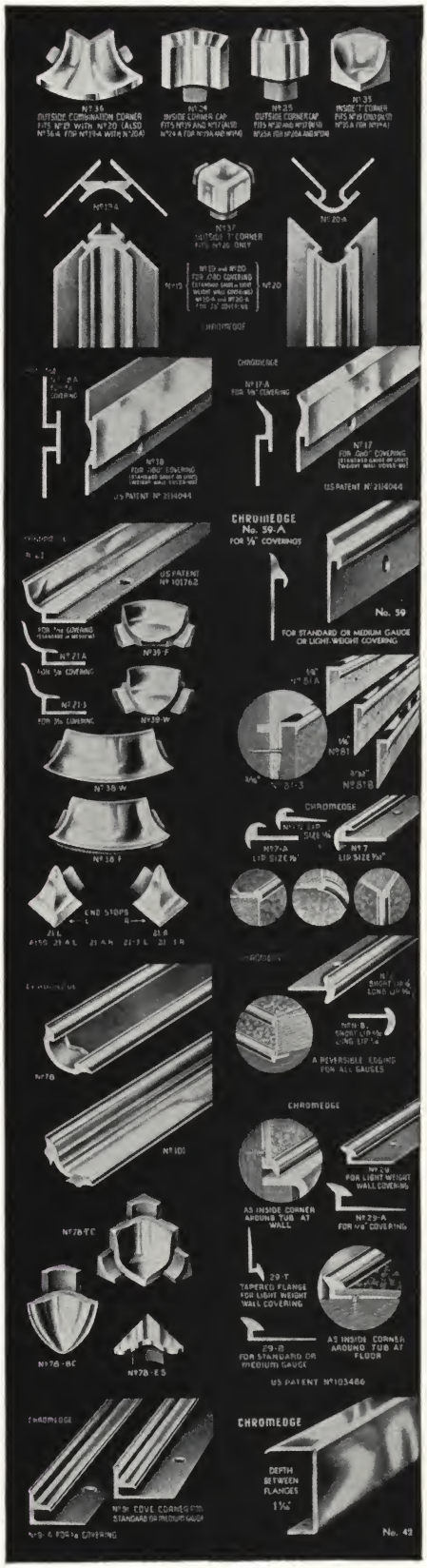
CONTINUED ⟶

THE B & T FLOOR COMPANY

MANUFACTURERS

"Chromedge" Trims for Floor and Wall Coverings

135 North Front Street, COLUMBUS, OHIO



NOTICE

These illustrations show approximately one-half size of trims and fittings. For full size illustrations, natural colors of linoleum inserts, and complete architectural specification details, see our new 24-page Catalog No. 39—A.I.A. File No. 15-L. Sent free on request.

DISTRIBUTORS NEAR YOU

You can telephone any of our many distributors, linoleum dealers or local building supply representatives, and get information on or samples of these trims immediately. Consult your telephone directory or write to us for name and telephone number of nearest representative. We have complete sales distribution established in the United States and Canada, and representatives in many foreign countries.

The Metal

Chromedge Metal Trims are fashioned from a special alloy of supreme grade that accepts *and retains* a brilliant polish or velvet finish. The metal resists rust and corrosion and is widely used to trim wall coverings around bathtubs, showers, sink-tops and drainboards.

Watertight Installations

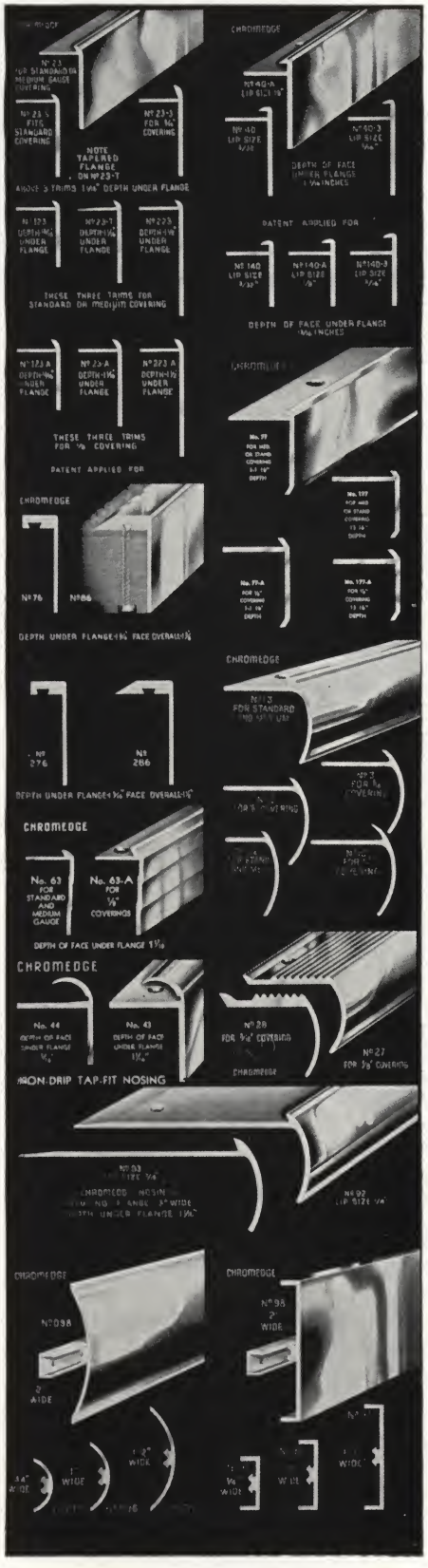
By embedding both metal and edges of covering in our special Chromedge Waterproof Cement an absolutely watertight bond may be obtained around sink-tops, bathtubs, etc. Notice the deep lip-recess on most of these trims. This "lip" accepts and conceals the raw edge of covering material.

Sizes for Many Coverings

You can get any design shown (many others not shown) in a size to fit all covering material. Chromedge Trims are made to fit the following types of covering material: *Formica, Wall Board, Masonite, Rubber, Linoleums, Terrazzo, Tile, Carpet, and decorative wall canvas.*

Fit All Angles and Curves

Most Chromedge Trims can be easily bent. For information on unusual bends please write us for photographs and specifications of some truly remarkable bends we have made (by a new exclusive process) in which there is *no distortion.*

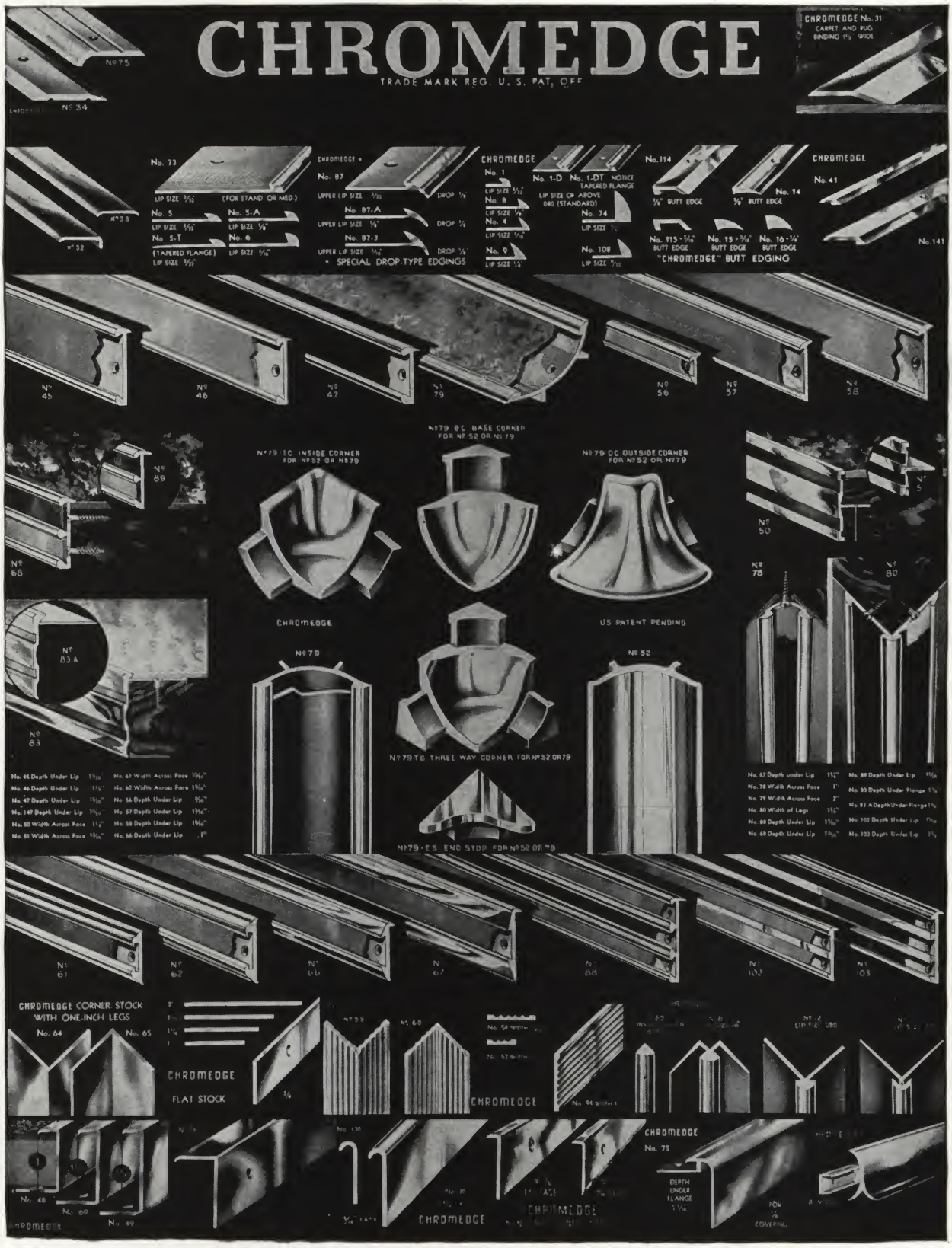


NEW LINOLEUM-FACED CHROMEDGE TRIMS

Shown in the central portion of the illustration group below, are many new counter-top and sink-top edgings and several corner mouldings *with colorful linoleum inserts.*

Illustrations below are approximately one-half size.

See these trims in full colors and actual sizes in our new 1939 catalog (A.I.A. File No. 15-L) sent free on request.



MEMORANDA

HerZim
Mouldings of Metal
HERRON-ZIMMERS MOULDING COMPANY, DETROIT

DECORATIVE MOULDINGS OF METAL

HerZim metal mouldings provide a permanent, practical trim, with new beauty, flash and color in tune with modern architectural and decorative trends. In this catalog we have selected but a few of the hundreds of mouldings available, choosing the mouldings that have proven most popular with the architect and builder.

HerZim mouldings are so designed that installation is simple and application costs low.

Samples of sections in which you are interested will be furnished on request, and we shall be happy to discuss with you any matters pertaining to the use of metal mouldings for any purpose.

HerZim

EASTERN OFFICE AND STOCK
Willard C. Ford Co.
329 East 45th St., New York
Murray Hill 4-5537

WESTERN OFFICE AND STOCK
Colotyle Corporation
700 Mercer St., Seattle, Wash.
GArfield 0920

ENGLAND
Metal Mouldings, Ltd.
Brettenham House
Lancaster Place, Strand, London

HERRON-ZIMMERS MOULDING COMPANY

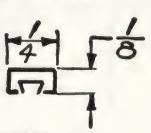
3900 EAST OUTER DRIVE ★ ★ DETROIT, MICHIGAN

HERZIM SNAP-ON MOULDINGS OF STAINLESS STEEL

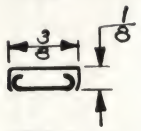
Covers are of polished, stainless steel. To apply, nail the retainer moulding in place and snap on the cover. All in standard 12 foot lengths.

Flat Snap-On, Cover and Retainer

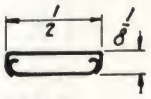
3562 Cover **3561** Retainer (Section shown below)



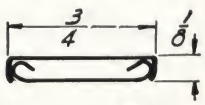
3469 Cover
3869 Retainer



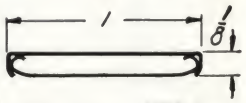
3773 Cover
3772 Retainer



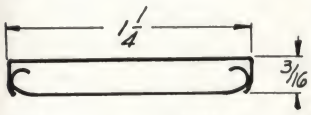
3702 Cover
3701 Retainer



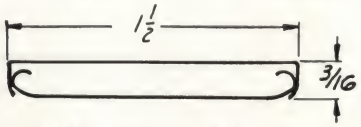
3562 Cover **3561** Retainer



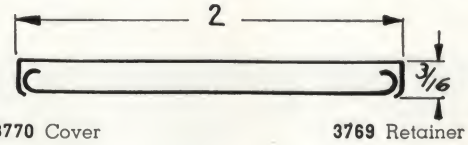
3704 Cover **3703** Retainer



3706 Cover **3705** Retainer

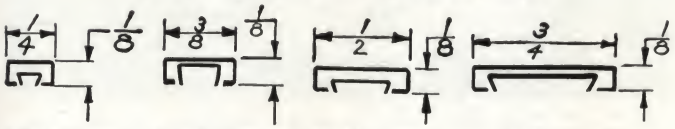


3716 Cover **3715** Retainer



3770 Cover **3769** Retainer

Flat Snap-On, with Reverse Legs



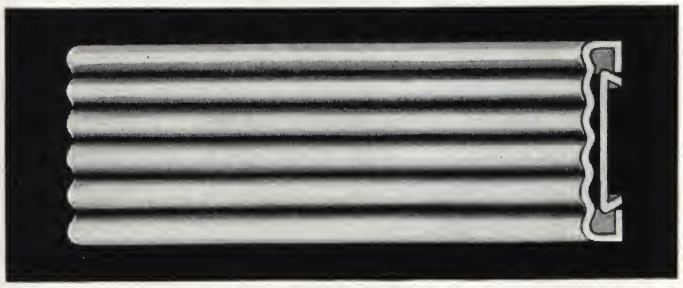
3469 Cover
3869 Retainer

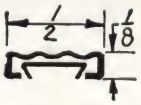
3877 Cover
3876 Retainer

3875 Cover
3873 Retainer

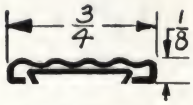
3872 Cover
3870 Retainer

Flat Snap-On, Corrugated Finish





3904 Cover
3873 Retainer

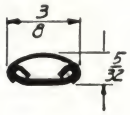


3905 Cover
3870 Retainer

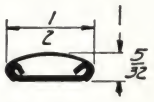
Oval Snap-On, Cover and Retainer

3165 Cover **3164** Retainer (Section shown below)

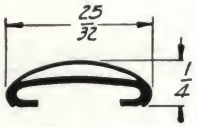
3517 Cover
3869 Retainer



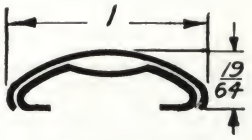
2006 Cover
3161 Retainer



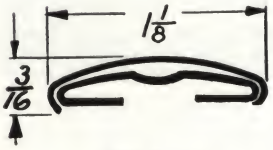
3236 Cover
3235 Retainer



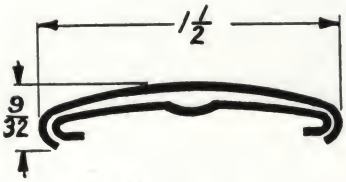
3067 Cover
2010 Retainer



3165 Cover
3164 Retainer



3202 Cover
3201 Retainer

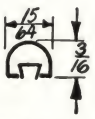


3204 Cover
3203 Retainer

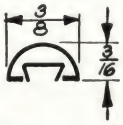
3898 Cover
3897 Retainer

Oval Snap-On, with Reverse Legs

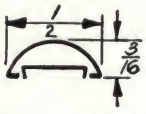
3517 Cover
3869 Retainer



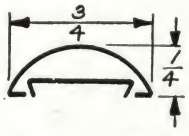
3388 Cover
3869 Retainer



3286 Cover
3876 Retainer



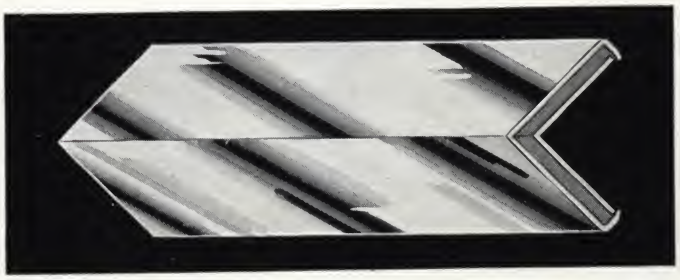
3874 Cover **3873** Retainer



3871 Cover **3870** Retainer

SNAP-ON COVE MOULDINGS

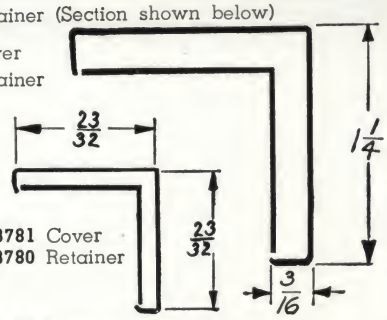
Outside Corners



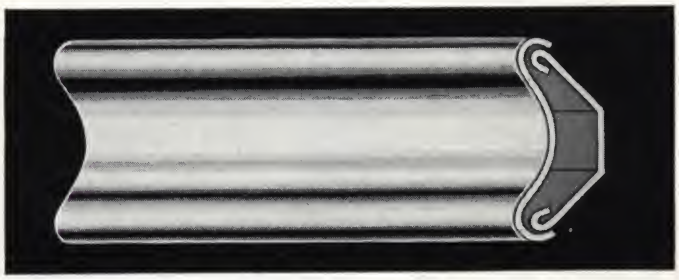
3781 Cover **3780** Retainer (Section shown below)

3887 Cover
3886 Retainer

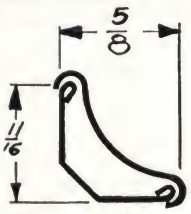
Covers in stainless steel. Easily applied, on new or old construction after other work has been completed. Both covers and retainers in standard 12 foot lengths.



Inside Corners

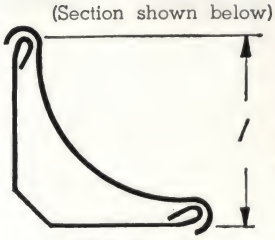


3590 Cover **3591** Retainer (Section shown below)



3590 Cover
3591 Retainer

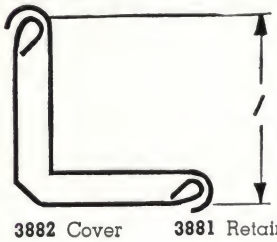
Cove Sections



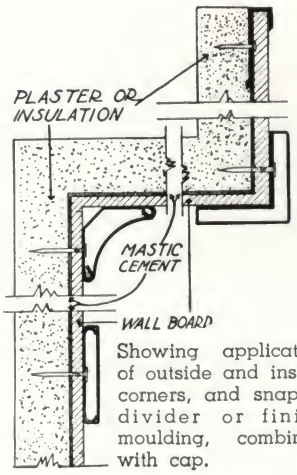
3883 Cover
3881 Retainer

Square Sections

3885 Cover **3884** Retainer



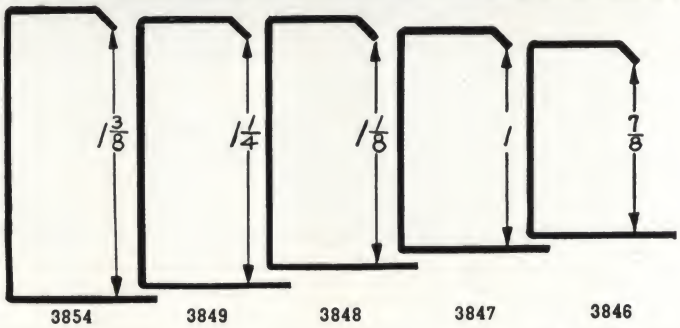
3882 Cover **3881** Retainer



Showing application of outside and inside corners, and snap-on divider or finish moulding, combined with cap.

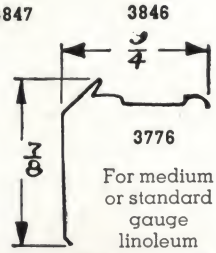
COUNTER EDGE MOULDINGS

In standard 12 foot lengths



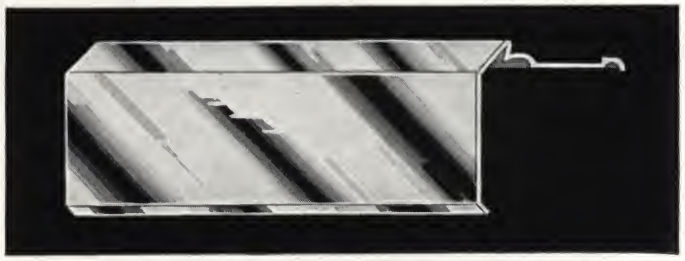
3854 **3849** **3848** **3847** **3846**

The counter edge mouldings, shown in actual size above, vary only in the opening dimension.



3776

For medium or standard gauge linoleum

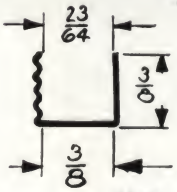


3776 (Section shown above)

CHANNELS IN STAINLESS STEEL

There are many channels carried in stock that are not shown in this condensed catalog. Let us know what you need. We have it. All are available in standard 12 foot lengths.

3844 (Section shown below)



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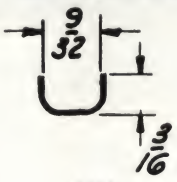
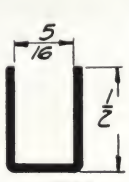
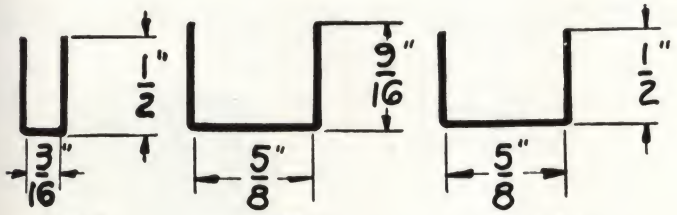
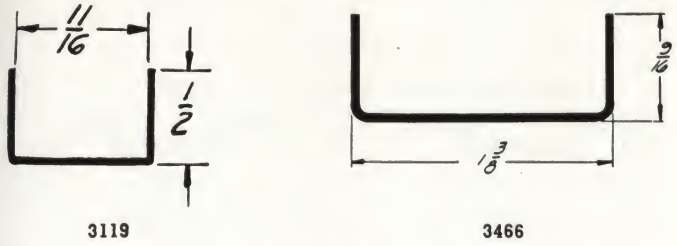


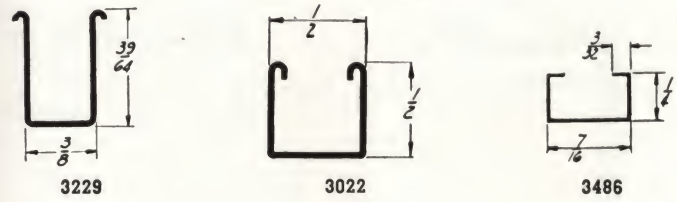
3225



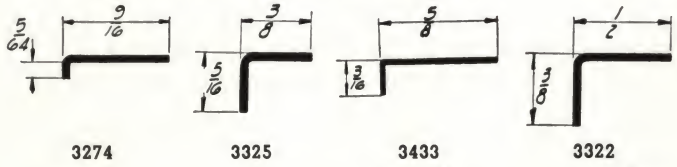
3024

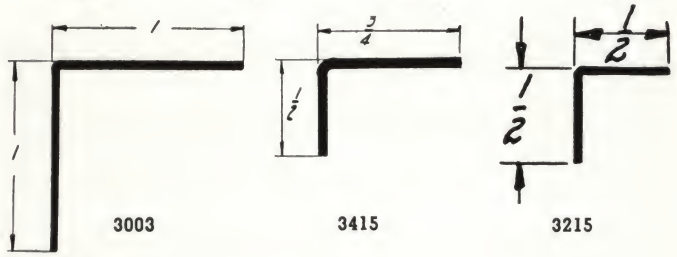


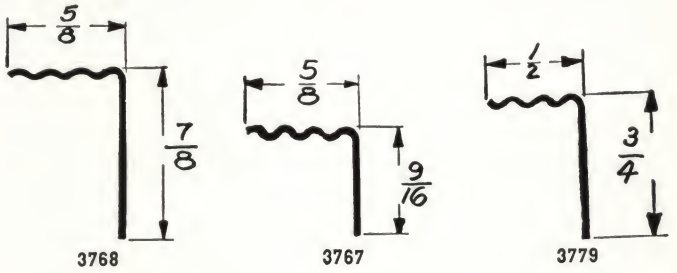




STEEL ANGLES

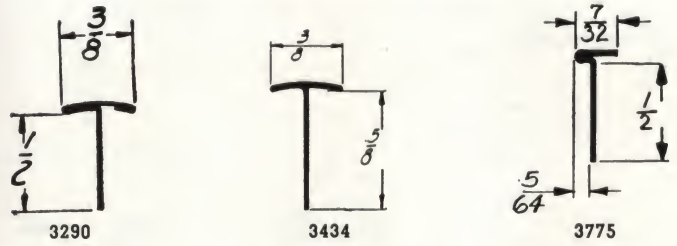


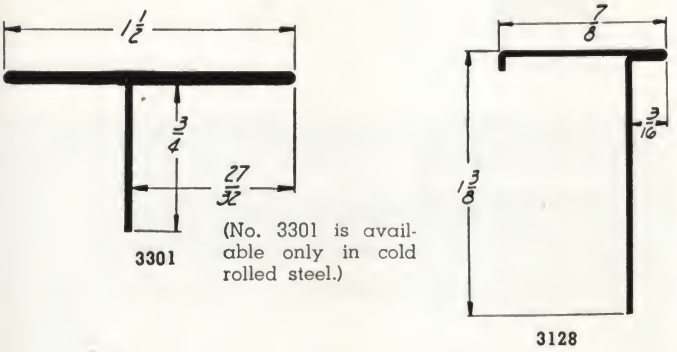




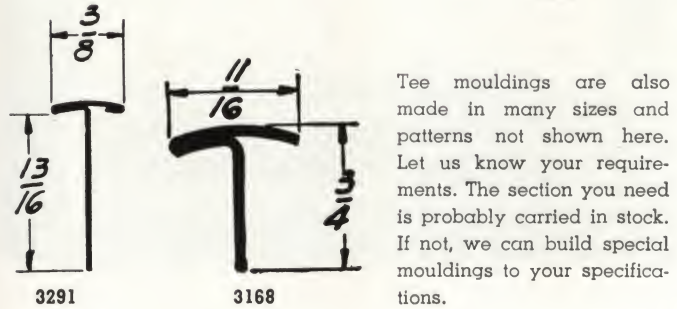
TEE MOULDINGS

All furnished in standard 12 foot lengths

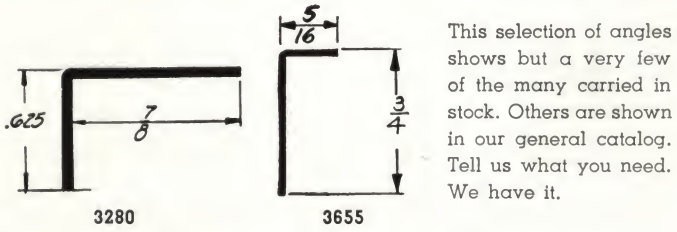




(No. 3301 is available only in cold rolled steel.)



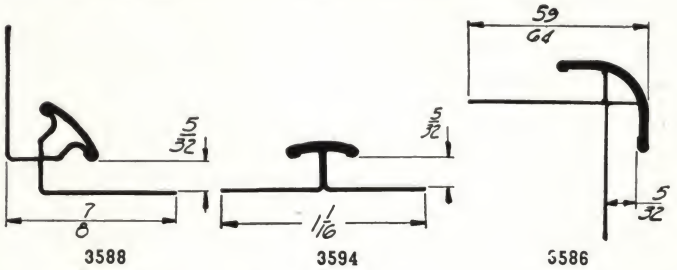
Tee mouldings are also made in many sizes and patterns not shown here. Let us know your requirements. The section you need is probably carried in stock. If not, we can build special mouldings to your specifications.

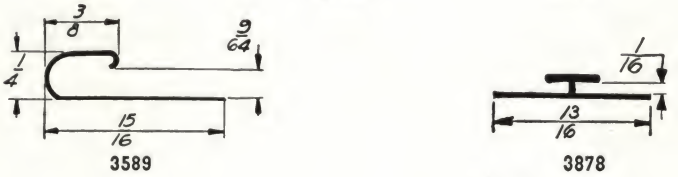


This selection of angles shows but a very few of the many carried in stock. Others are shown in our general catalog. Tell us what you need. We have it.

WALLBOARD MOULDINGS OF STAINLESS STEEL

All sections below are also available in chrome zinc.



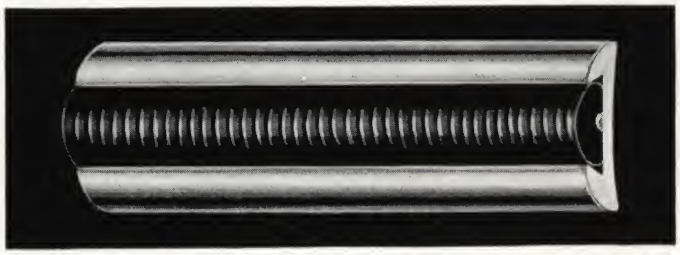


HERZIM ALUMINUM FINISH MOULDING WITH FILLER INSERTS

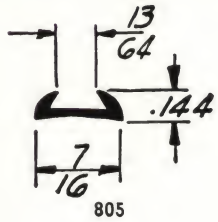
Provides a beautiful finish, with colored inserts that harmonize with decorative treatment. Easily applied, on old or new construction after other work is completed, by nailing in place and inserting filler which covers nails and adds a gay touch of color. Standard lengths of 12 feet.

Flexible HerZim Filler

Available in a wide variety of colors, in rolls of 50, 100, 300 and 500 feet. In ordering, specify color and moulding section with which it is to be used.



637, 7/8" wide



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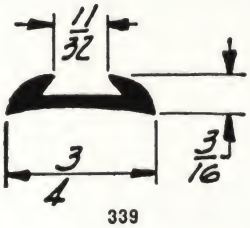

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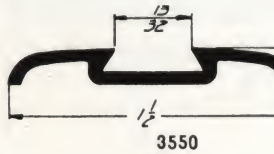

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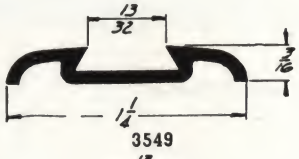

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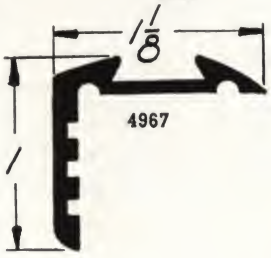

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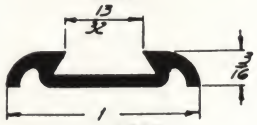

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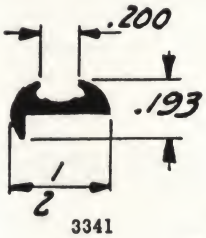

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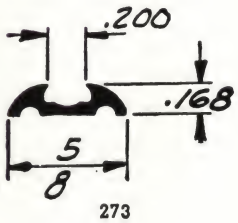

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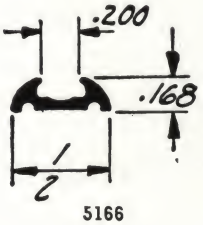

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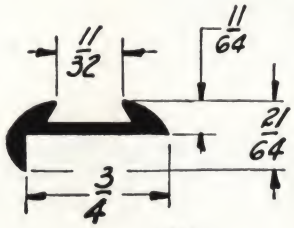

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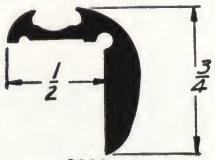

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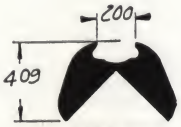

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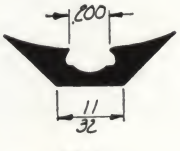

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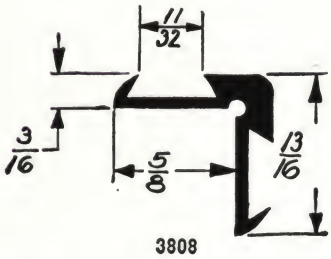

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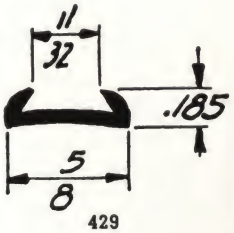

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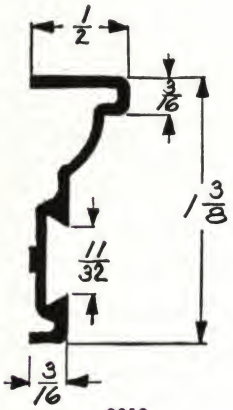

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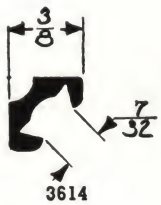

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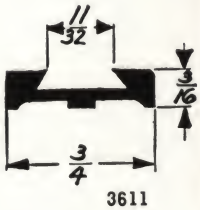

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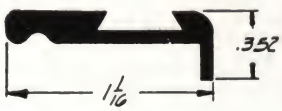

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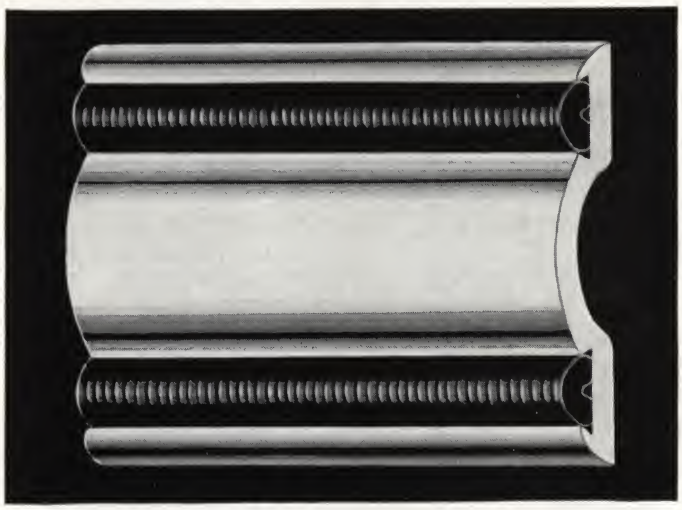
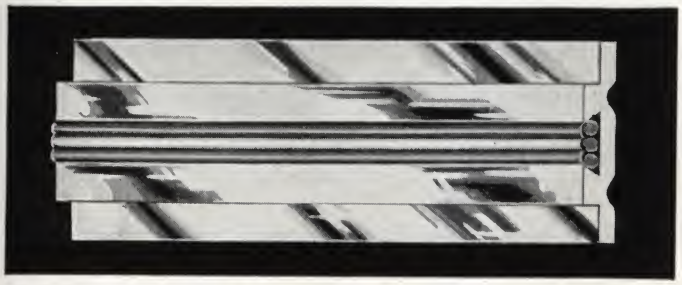


3554, 2 3/16" wide

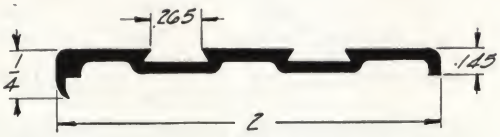
HERZIM BEAD INSERT MOULDINGS

A delightful new treatment, with striped beading inserts in various colors and color combinations. Inserts are quickly applied after mouldings are nailed in place. In standard lengths of 12 feet.

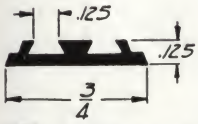


3679, 1" wide, 3 bead

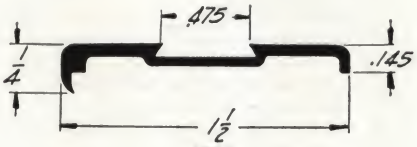
3678, 3 bead



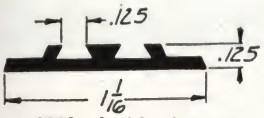
3728, double 4 bead



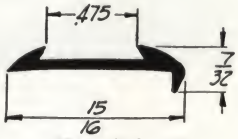
3680, double 2 bead



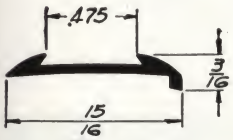
3727, 7 bead



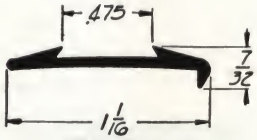
3681, double 2 bead



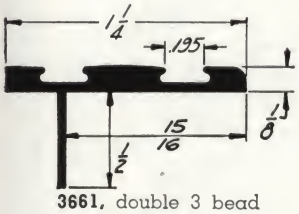
3741, 7 bead



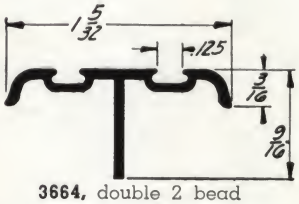
3739, 7 bead



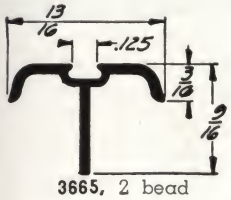
3740, 7 bead



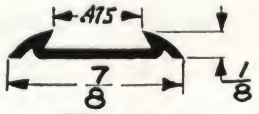
3661, double 3 bead



3664, double 2 bead



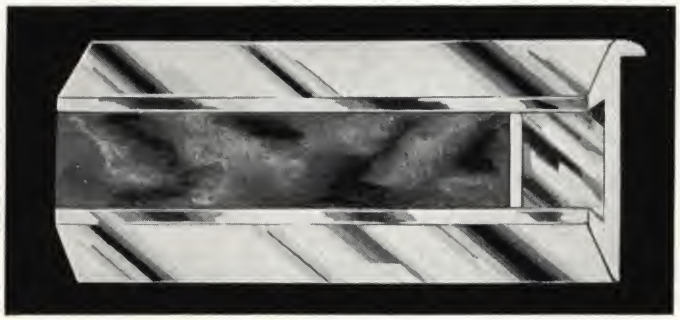
3665, 2 bead



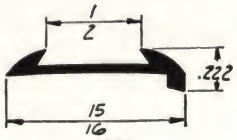
3774, 7 bead

HERZIM LINOLEUM INSERT MOULDINGS

Linoleum inserts, in matching or contrasting colors, applied after moulding has been screwed or nailed in place. Ideal for table, sink board and counter nosing. In standard 12 foot lengths.



3686, $1\frac{3}{16}$" wide



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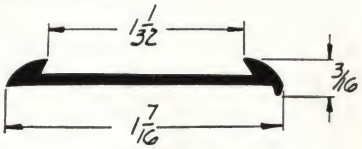

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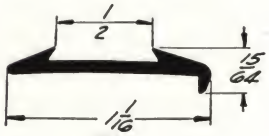

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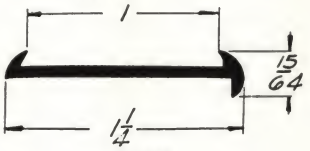

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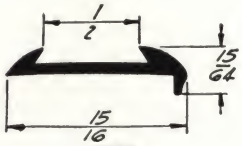

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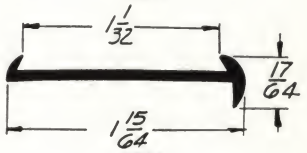

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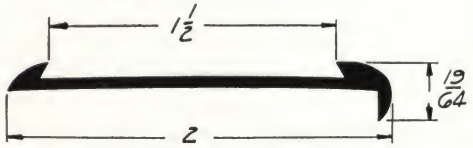

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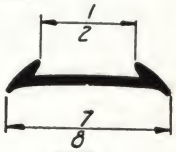

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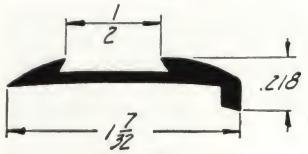

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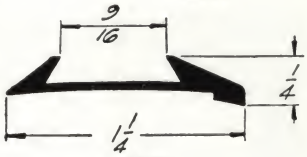

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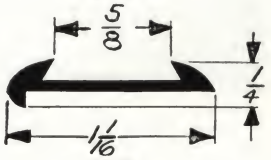

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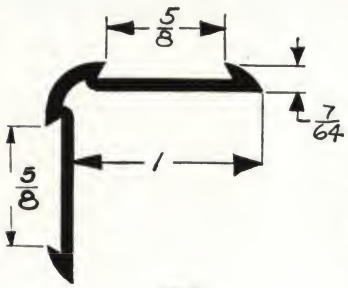

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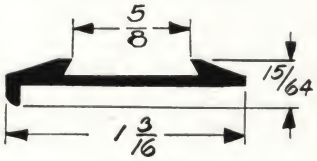
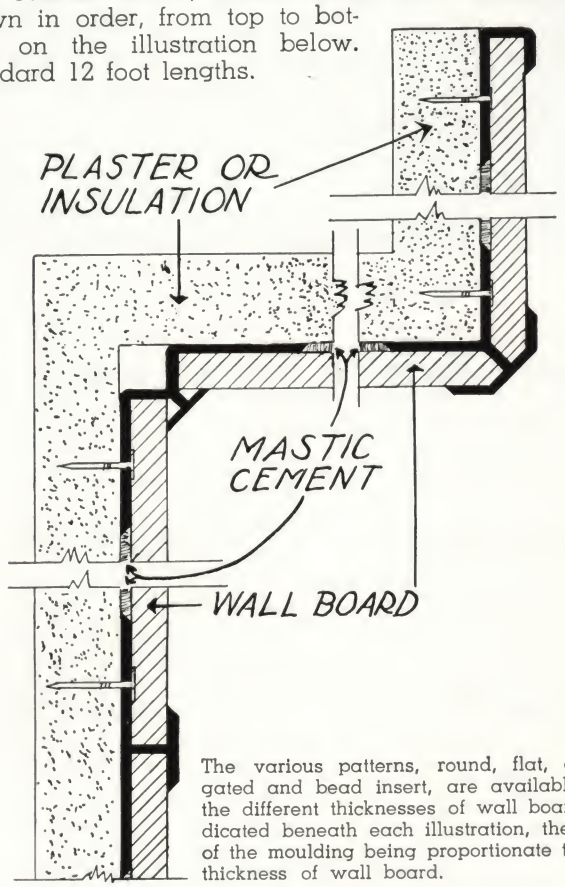


3818

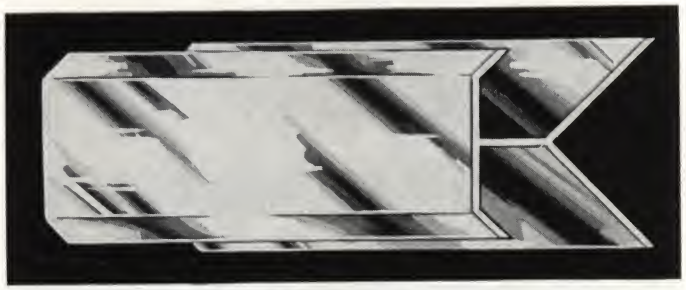
WALL BOARD MOULDINGS IN ALUMINUM

The extensive use of the many types of wall board and wall tile, both for new construction and modernization, has created a heavy demand for mouldings that simplify application and add beauty. The HerZim line meets these requirements fully, with matched sets of cap, outside corner, inside corner and divider strip, shown in order, from top to bottom, on the illustration below. Standard 12 foot lengths.



The various patterns, round, flat, corrugated and bead insert, are available for the different thicknesses of wall board indicated beneath each illustration, the size of the moulding being proportionate to the thickness of wall board.

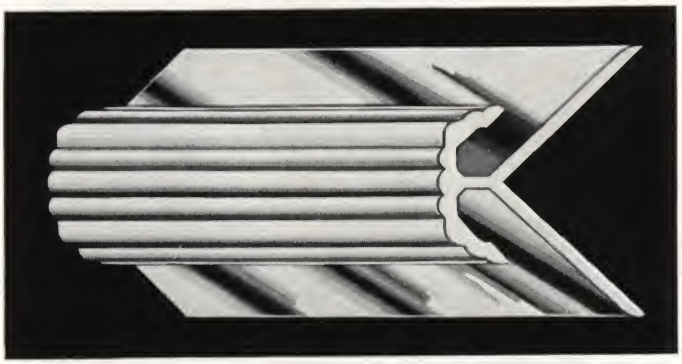
Flat Pattern



3635 Outside corner for 3/8" wallboard.

Wallboard Thickness	Outside	Inside	Divider	Cap
3/16"	3627	3626	3629	3628
1/4"	3631	3630	3632	3633
3/8"	3635	3634	3637	3636
1/2"	3639	3638	3641	3640

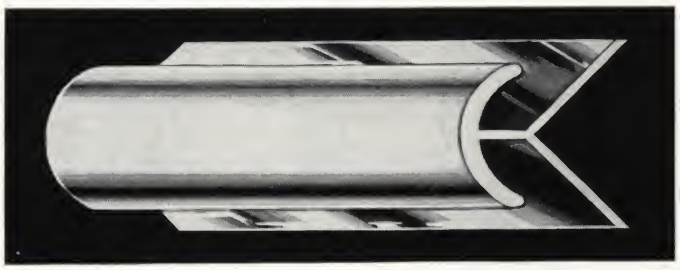
Corrugated Pattern



3335 Outside corner for 3/16" wallboard.

Wallboard Thickness	Outside	Inside	Divider	Cap
3/16"	3335	3333	3334	3332

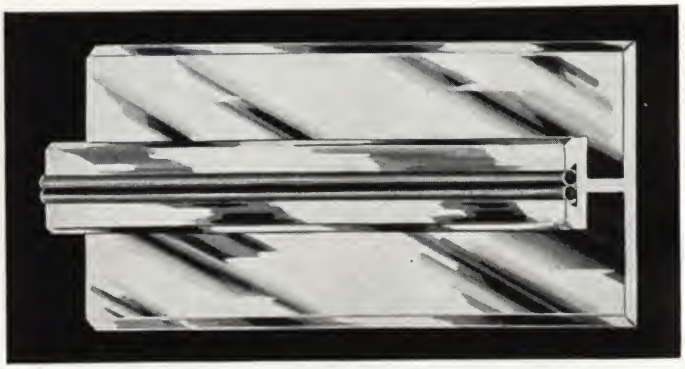
Round Pattern



3658 Outside corner for 3/16" wallboard.

Wallboard Thickness	Outside	Inside	Divider	Cap
1/16"	3331	3347	3346	3348
1/8"	3670	3669	3668	3667
3/16"	3658	3659	3541	3540
1/4"	3657	3530	3538	3529
3/4"	3812	....	....	....

Bead Insert Pattern

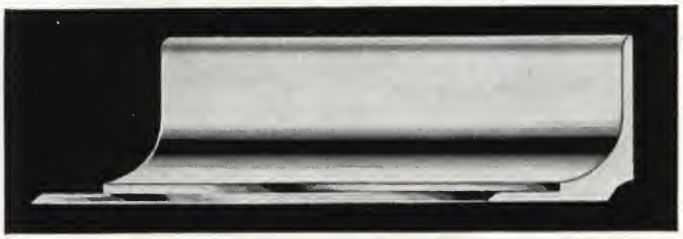


3690 Bead insert divider strip for 1/8" wallboard.

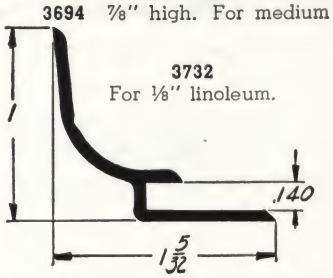
Wallboard Thickness	Outside	Inside	Divider	Cap
1/8"	3711	3712	3690	3713

ALUMINUM COVE MOULDINGS

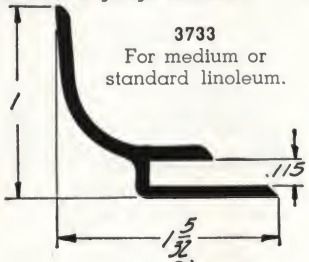
Sanitary coves, of extruded aluminum, for use with linoleum or other materials on floors, sink backs, etc., and with wall board or insulation for ceiling and corners. All sections in standard 12 foot lengths.



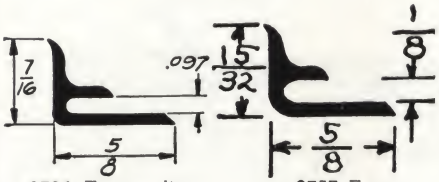
3694 7/8" high. For medium or standard gauge linoleum.



3732
For 1/8" linoleum.

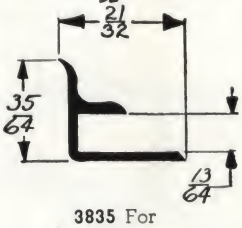


3733
For medium or standard linoleum.

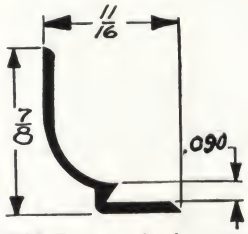


3734 For medium or standard linoleum.

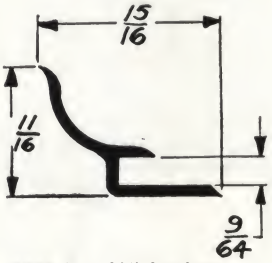
3757 For 1/8" linoleum.



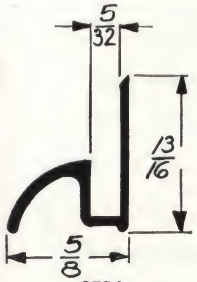
3835 For 3/16" linoleum.



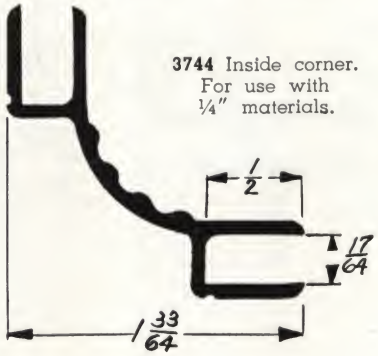
3652 For standard or medium linoleum.



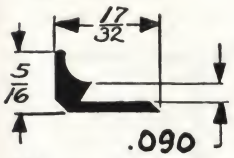
3833 For 1/8" linoleum.



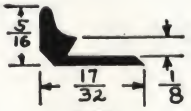
3754
For use with 1/4" materials.



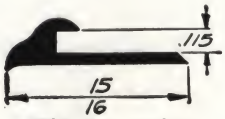
3744 Inside corner. For use with 1/4" materials.



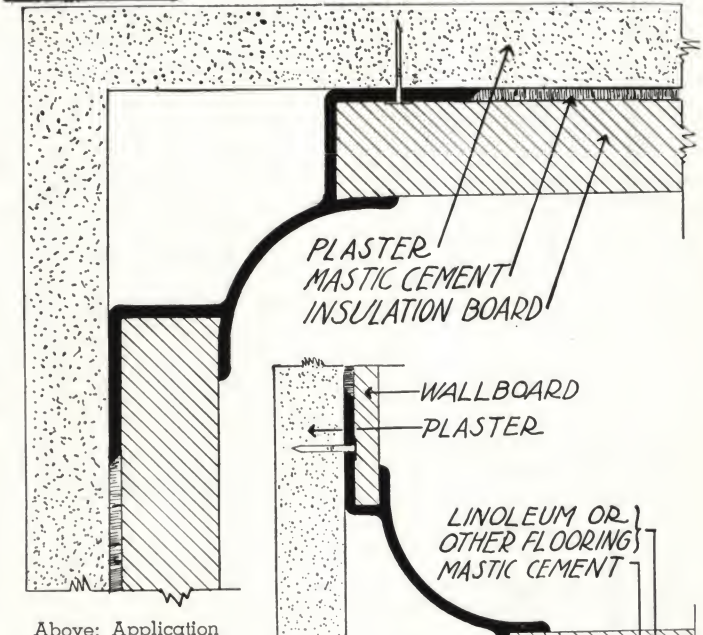
3651 For standard or medium linoleum.



3765
For 1/8" linoleum.



3735 For medium or standard linoleum.

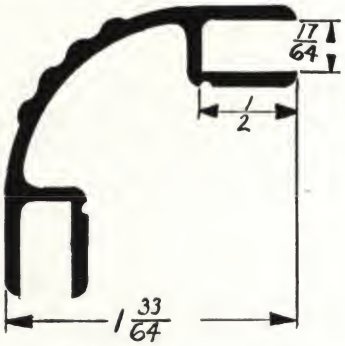


3752 For 1/2" materials.

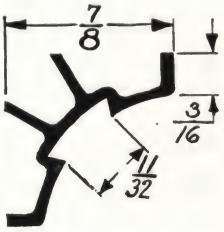
3663 For use with 1/8" wall material and linoleum.

Above: Application of ceiling and corner cove, 3752.

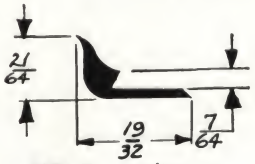
At Right: Application of base cove, 3663.



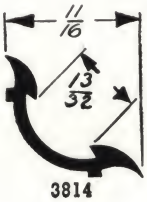
3743 Outside corner, for use with 1/4" materials.



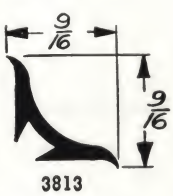
3612 Inside cove for use with HerZim filler.



3821 For medium or standard linoleum.



3814

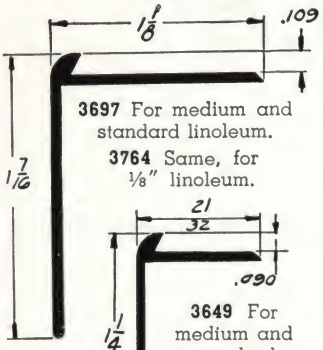


3813

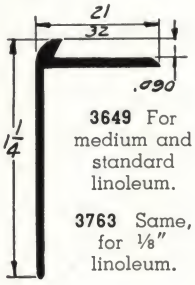
EDGING MOULDINGS

Available in a wide variety; for table, counter and sink top, doorway and wainscot edges. In standard 12 foot lengths.

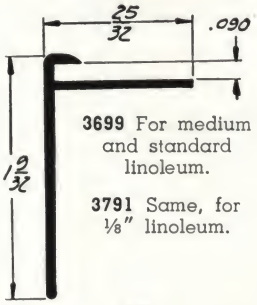
3724 $1\frac{3}{16}$" wide. For $\frac{3}{16}$" linoleum.



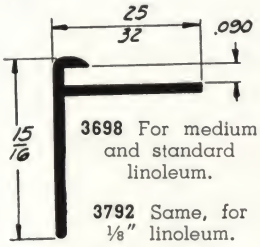
3697 For medium and standard linoleum.
3764 Same, for ⅛" linoleum.



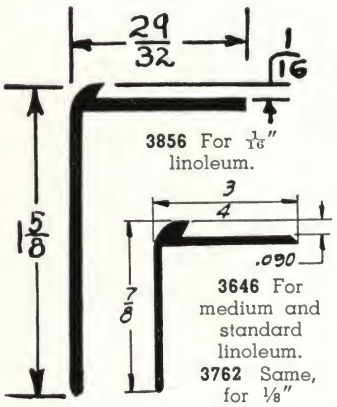
3649 For medium and standard linoleum.
3763 Same, for ⅛" linoleum.



3699 For medium and standard linoleum.
3791 Same, for ⅛" linoleum.

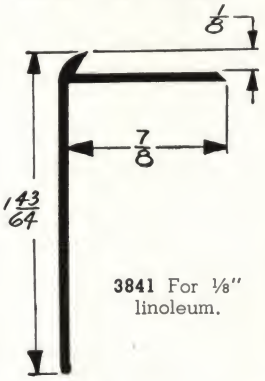


3698 For medium and standard linoleum.
3792 Same, for ⅛" linoleum.

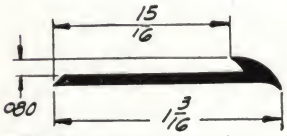


3856 For $\frac{1}{16}$" linoleum.

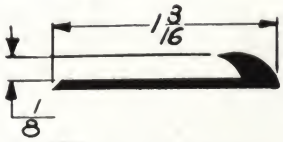
3646 For medium and standard linoleum.
3762 Same, for ⅛" linoleum.



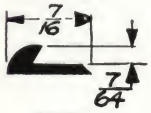
3841 For ⅛" linoleum.



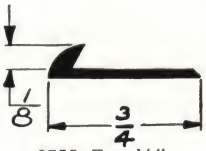
3725 For standard linoleum.



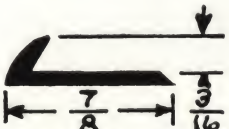
3766 For ⅛" linoleum.



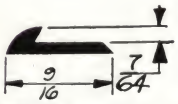
3787 For medium and standard linoleum.



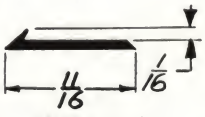
3755 For ⅛" linoleum.



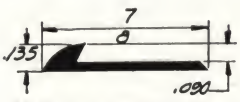
3855 For $\frac{3}{16}$" linoleum.



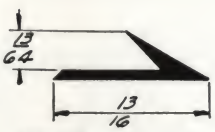
3822 For medium and standard linoleum.



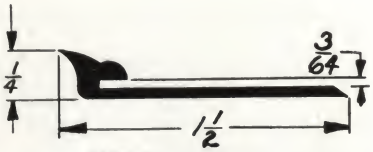
3819 For $\frac{1}{16}$" linoleum.



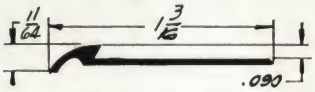
3645 For medium and standard linoleum.



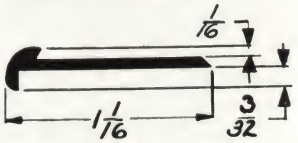
3722 For ¼" linoleum.



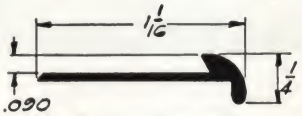
3837 For Linowall



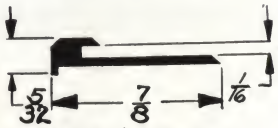
3644 For medium and standard linoleum.



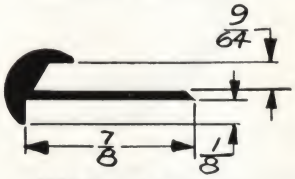
3825 For $\frac{1}{16}$" linoleum.



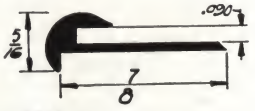
3650 For medium and standard linoleum.



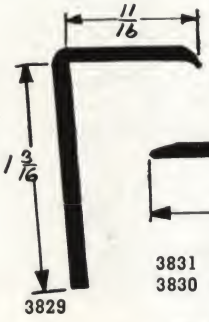
3834 For $\frac{1}{16}$" linoleum.



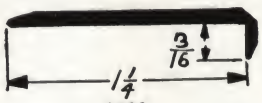
3838 For ⅛" linoleum.



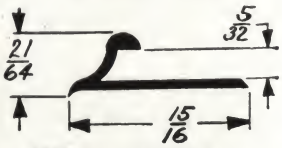
3643 For medium and standard linoleum.



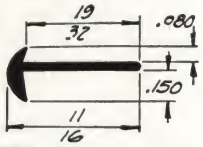
3829



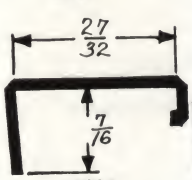
3832
3831 Same, $1\frac{1}{16}$" flange.
3830 Same, $\frac{1}{16}$ flange.



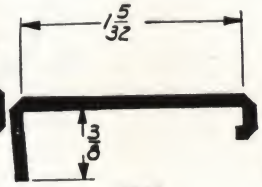
3839 For ⅛" linoleum.



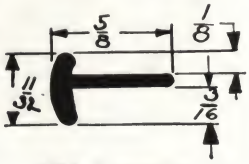
3729 Reversible, for medium and standard or ⅛" linoleum.



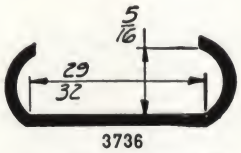
3824



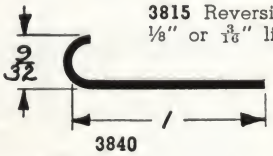
3823



3815 Reversible, for ⅛" or $\frac{3}{16}$" linoleum.



3736



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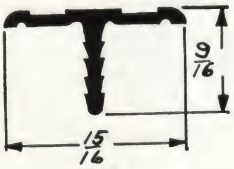
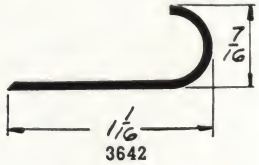
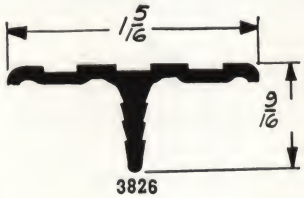


3836

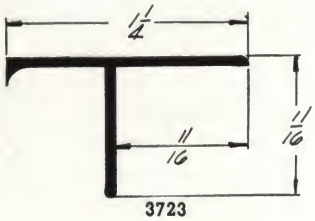
Flange Mouldings
Flange is driven into sawcut in table or counter edge.



3642



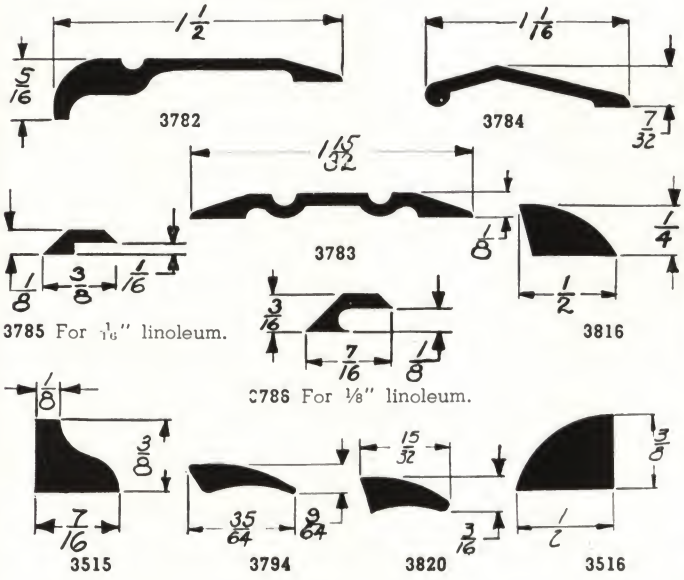
3826



3723

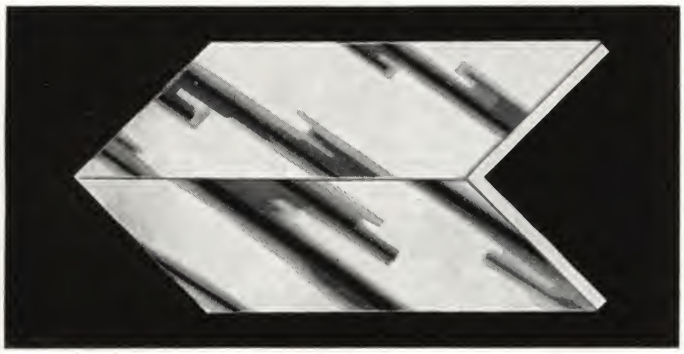
THRESHOLD AND BUTT EDGINGS

In standard 12 foot lengths



ALUMINUM ANGLES

In standard 12 foot lengths



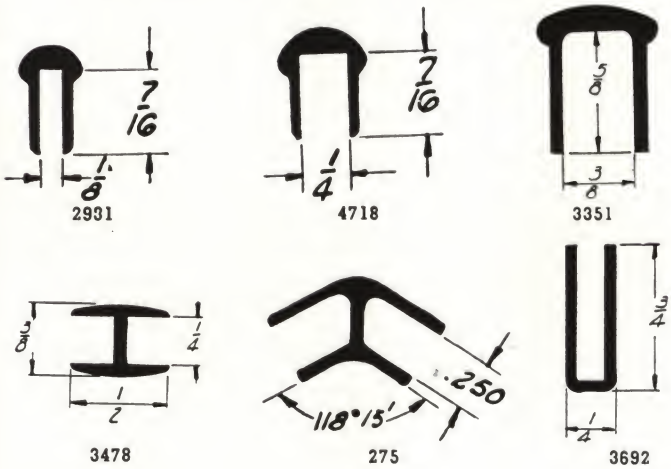
3509 1"x1"x1/16"

3501	1¼"x19/32"x3/32"	**3865**	¾"x¾"x3/32"
3507	1"x1"x⅛"	**3511**	11/16"x⅝"x1/16"
3508	1"x1"x3/16"	**3510**	½"x½"x1/16"

(Outside dimensions are used.)

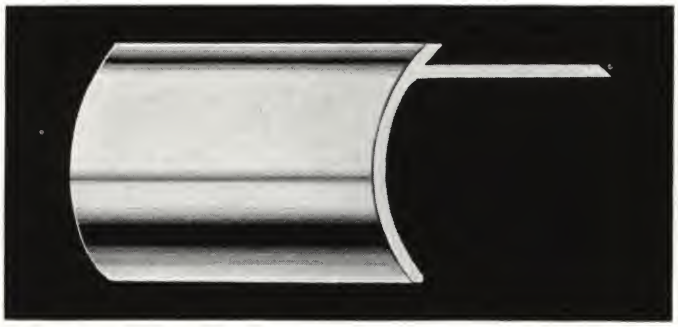
ALUMINUM CHANNELS

For glass. In standard 12 foot lengths

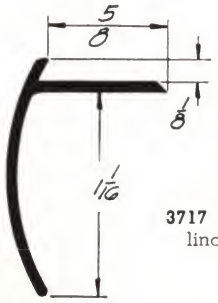


ALUMINUM STAIR NOSING

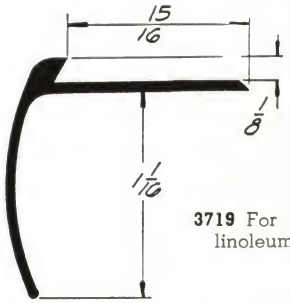
Also used as table, counter and sink top edging. In standard 12 foot lengths.



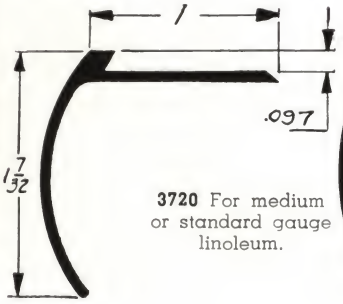
3647 For medium or standard gauge linoleum.



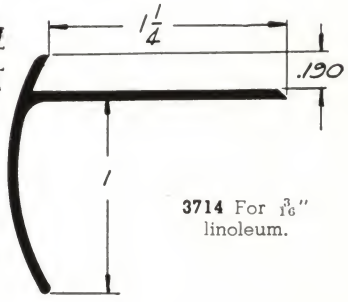
3717 For ⅛" linoleum.



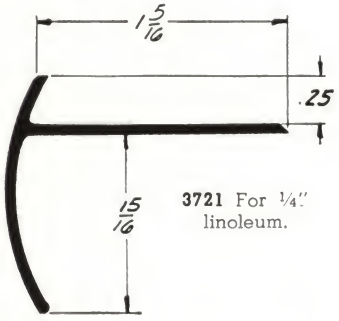
3719 For ⅛" linoleum.



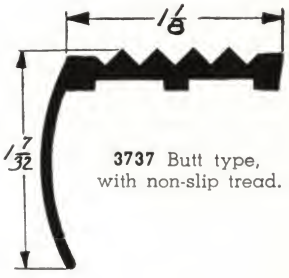
3720 For medium or standard gauge linoleum.



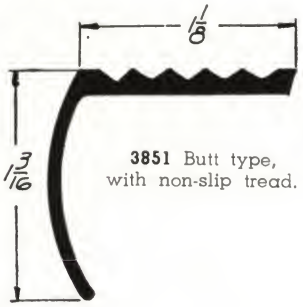
3714 For 3/16" linoleum.



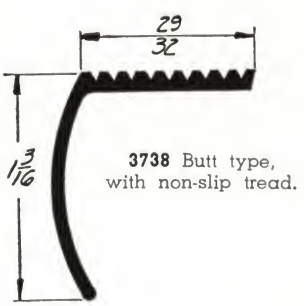
3721 For ¼" linoleum.



3737 Butt type, with non-slip tread.



3851 Butt type, with non-slip tread.



3738 Butt type, with non-slip tread.

HerZim
Mouldings of Metal
HERRON-ZIMMERS MOULDING COMPANY, DETROIT

THE HIMMEL BROTHERS CO.

Manufacturers of "Himco" Stainless Laminated Snap-On Mouldings

1409-15 Dixwell Avenue, HAMDEN, CONN.

(Suburb of New Haven)

For our catalog on Store Front Construction see File Index

"HIMCO" STAINLESS LAMINATED SNAP-ON MOULDINGS

Manufactured Under Patent 1984134 and Other Patents Pending

For Decorative Effects and As Cover Moulds Over Jointing of Sheet Materials

The effectiveness of stainless mouldings or bands in modern decoration and design is often desired but in many cases the cost is prohibitive. "Himco" now offers Non-tarnishable Stainless Laminated Snap-on Moulding within the same price range as copper, bronze or aluminum.

Stainless Laminated Snap-on Mouldings are non-tarnishable and made of Stainless Steel 18-8 laminated over a non-corrosive base. They present exactly the same appearance as solid stainless at a fraction of the cost. They require no polishing of any description.

Means of Fastening Are Invisible

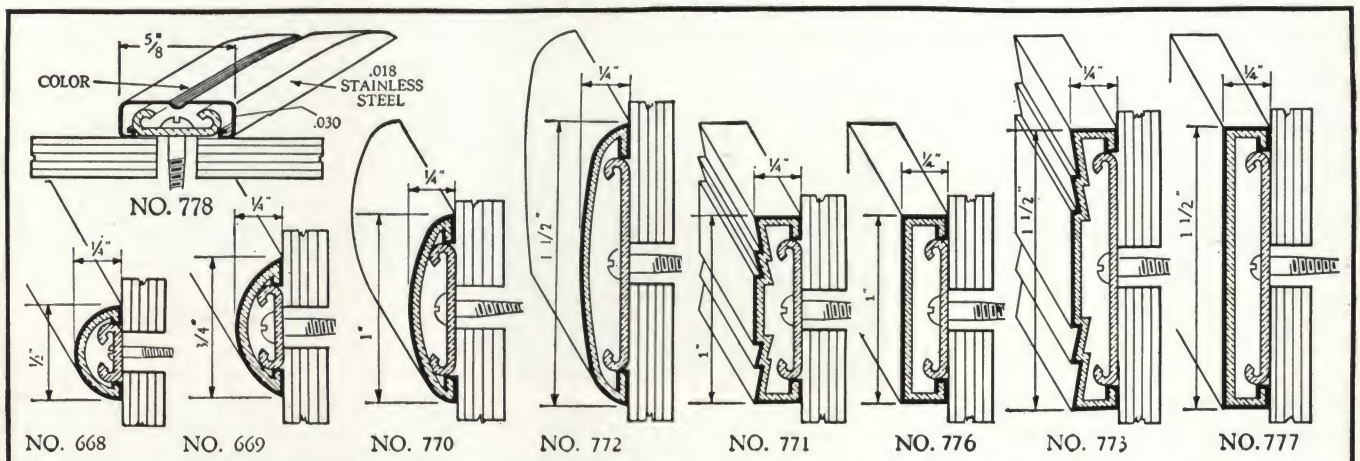
The beauty of decorative bands is spoiled when the means of fastening are visible. With "Himco" Mouldings a base fastening plate is secured in place over the joint between sheet materials or on flat surfaces. Then the finished moulding is snapped on over the base plate.

Other Metals and Shapes Also Supplied

"Himco" Snap-on Mouldings are also made in Aluminum, solid Stainless Steel and Bronze. Brass and Copper mouldings will be made to order.

Curved, bent and circular shapes can also be made to order.

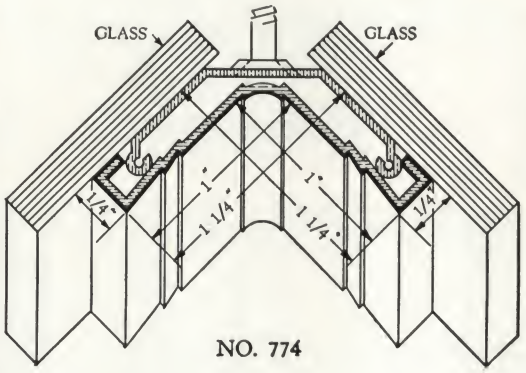
Application—The inner member is first applied with screws or nails and holds the sheet material firmly in place. The outer snap-on member snaps over the inner member completely covering all nails and screws.

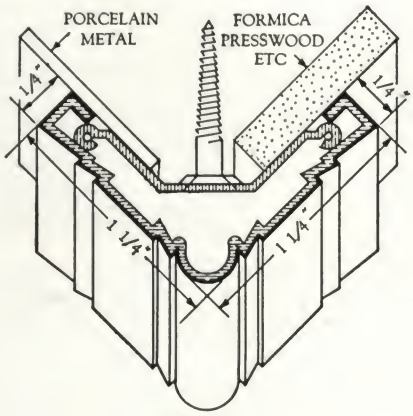


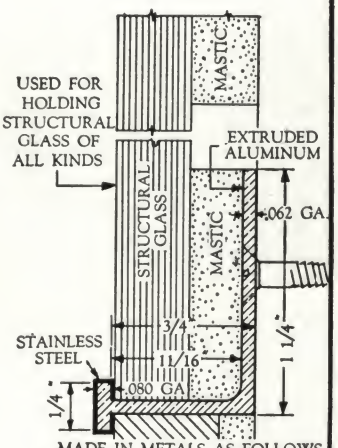
OUTER MEMBER IS NON-TARNISHABLE, STAINLESS, LAMINATED METAL, "ALUMCRO" (ALUMINUM ALLOY), SOLID STAINLESS STEEL OR BRONZE.

INNER MEMBER AND CONTINUOUS CLIP ARE OF NON CORROSIVE METAL

GAUGES OUTER MEMBER .032-INNER MEMBER .030







MADE IN METALS AS FOLLOWS
1X-ALUMINUM EXTRUDED
1XB-BRONZE LAMINATED
1XL-LAMINATED STAINLESS BLACK ALUMCROXITE

"HIMCO" STAINLESS, LAMINATED, SNAP-ON MOULDINGS

(Patented and Patents Pending)

PYRAMID METALS COMPANY

Manufacturers of SNAP-ON Mouldings

Chromium—Stainless Steel—Copper—Bronze—Brass

1343 North Wells Street, CHICAGO, ILL.

PYRAMID REPRESENTATIVES

ATLANTA, GA., A. H. McAfee & Son, 363 Hopkins St., S. W.
BUFFALO, N. Y., W. W. Dobkin Co., 27 E. Ferry St.
BUTTE, MONT., J. C. Jernberg, P. O. Box 166
CHATTANOOGA, TENN., J. H. Botsford & Co., 1302 Anderson Ave., P. O. Box 884
CINCINNATI, OHIO, C. M. Kreider, Cincinnati Floor Co., Eastern Ave. at Linwood
CLEVELAND, OHIO, S. R. Howe, 1836 Euclid Ave.
DALLAS, TEX., H. A. Auchter, 102 Thomas Bldg.
DAYTON, OHIO, J. M. Kemper, 653 Reibold Bldg.
DENVER, COLO., Lauren Burt, 3254 Walnut St.
DETROIT, MICH., P. E. Attick, 17215 Parkside Ave.
ERIE, PA., H. E. McLaughlin, 612 W. 21st St.
HOUSTON, TEX., Lehman Steel Prod. Co., 340 Merchants & Mfrs. Bldg.
INDIANAPOLIS, IND., C. H. Taylor, Pennway Bldg.
KANSAS CITY, MO., Reid Sales Co., 310 E. 17th St.
LOS ANGELES, CALIF., E. B. Bradley Co., 757 So. San Pedro St.
LOUISVILLE, KY., D. W. Lawler, 1911 Rutherford St.
MEMPHIS, TENN., G. O. Friedel, Builders Exchange
MINNEAPOLIS, MINN., H. F. Crinklaw, 610 E. 15th St.
NEW ORLEANS, LA., L. E. Kenney, 314 Pan American Bldg.
NEW YORK, N. Y., Pyramid Mouldings, Inc., 354 Fourth Ave.
PHILADELPHIA, PA., E. R. Free, Architects Bldg.
PITTSBURGH, PA., C. F. Gray, 501 Sandusky St.
QUINCY, MASS., W. L. Gundry, 2 Hancock St.
ROCHESTER, N. Y., Edgar Shantz, 89 Allen St.
ST. LOUIS, MO., E. A. Johnson, 455 Paul Brown Bldg.
ST. PETERSBURG, FLA., Southern Equipment Co., P. O. Box 1795
SAN FRANCISCO, CALIF., E. B. Bradley Co., 462 Bryant St.
SEATTLE, WASH., E. B. Bradley Co., 2412 First Ave., So.
TOLEDO, OHIO, E. B. Yesbera, 325 No. Erie St.

Pyramid Snap-On Mouldings

Pyramid Metal Mouldings afford a modern decorative trim with a permanence that meets the need of architects and designers who plan for the future.

The Snap-On feature conceals all nails or screws and presents unbroken lines so desirable in modern decoration.

Thousands of homes, offices, bars, restaurants and business houses have profited through the atmosphere of refined richness which the correct use of Pyramid Mouldings brings.

Pyramid Mouldings are not plated. There is no coating to flake or wear off. They are made of Stainless Steel throughout—the only Chromium metal that does not rust, tarnish or corrode.

The many standard styles and sizes of Pyramid Metal Mouldings afford a wide variety of patterns to meet nearly every architectural need. Special designs can be made to order. Typical installations are shown on this page. Many others in our *new* catalog. Send for your copy.

Installation

The Snap-On feature of Pyramid Metal Mouldings insures economical application for new work or remodeling. Often this feature permits a labor saving of more than 50%.

Installation is made after all other work is finished without regard to joints, thickness, or kind of wall covering material. Pyramid Mouldings afford utmost flexibility. They may be placed to suit the best design without regard to methods of construction.

Pyramid Mouldings are also available in Brass, Bronze, Copper or Aluminum. Bright Mirror or Satin Velvet Finish may be had on all metals.

Industrial Mouldings

Pyramid issues an industrial catalog showing trim on many products, such as air conditioning, heater, bottle cooler and radio cabinets, stoves, signs, vending machines, beauty parlor furniture, trucks and streamline trains. Send for your copy.

Flat Top Snap-On Mouldings

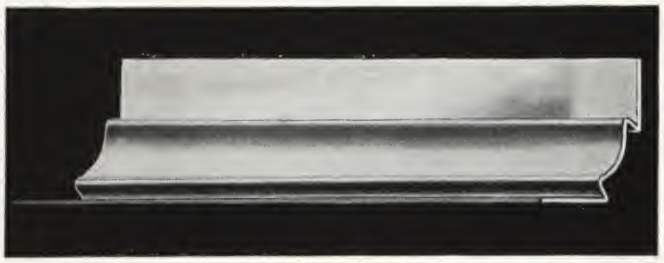
Illustration shows 12-S, 1 in. wide. Other sizes: ¼, ⅜, ½, ¾, 1¼, 1½, 1¾ and 2 in.

Counter Edge Mountings

CE-1, shown, is used on edges of counters, cabinets and sink tops. Carried in stock for many thicknesses of tops. Other edge shapes made for different applications.

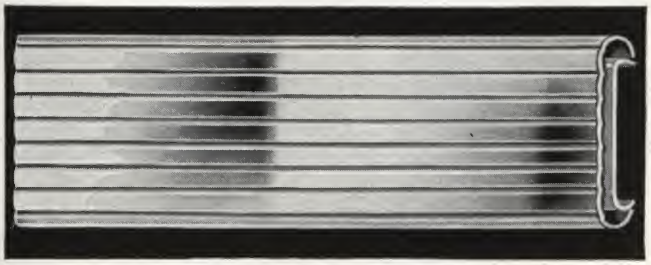
Half Round Mouldings

The above moulding is 13-S, 1 in. wide. Also made ¾, ½, ⅜ and ¼ in.



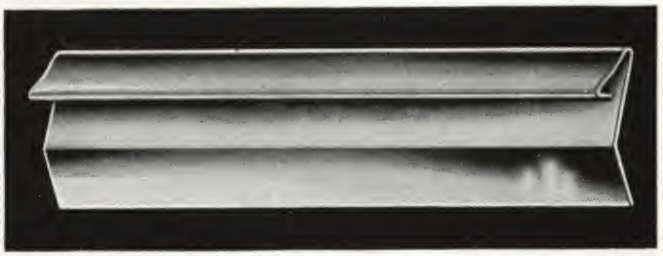
Drain Cove for Application Before Top Material

DC-1, shown, makes an attractive water-tight joint between the drain-board and back-splash. For material $\frac{1}{16}$ in or $\frac{3}{32}$ in. will fit ⅛ in. material if the edge is beveled slightly.



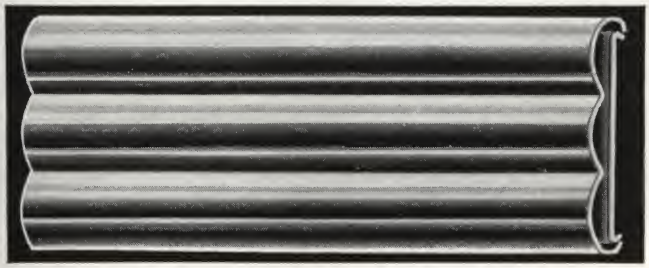
Flat Top Ripple Corrugated

12-RS, 1 in. wide shown here. Also made ½, ¾ and 1¼ in. wide.



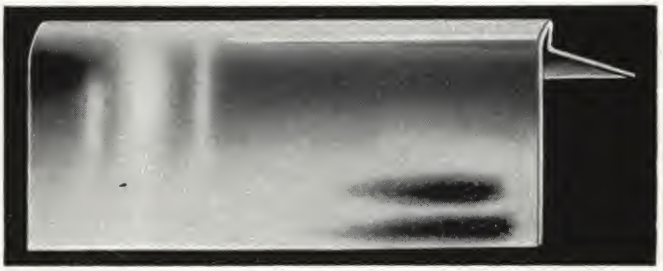
Drain Cove for Application after Top Material

DC-2 is applied with flange between sink-top and back-splash. The offset flange forces the exposed edges tightly against the sink-top and back-splash.



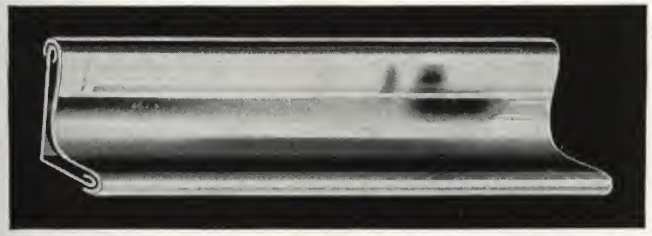
Triple Corrugated Pattern

16-TS, 1¼ in. wide, shown, has three oval corrugations. Also made 2 in. wide, 22-TCS; and 1½ in. wide, 18-TCS.



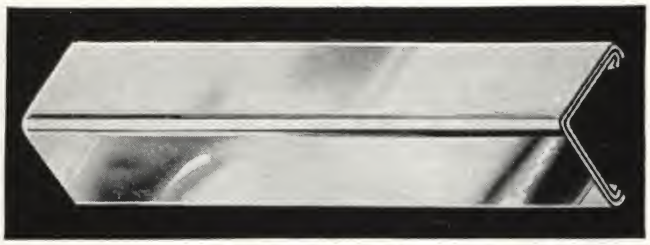
Edge Mouldings

CE-4, especially designed for edges of desks, tables or counters. No screws or nails are exposed. Size shown for 1-in. top (⅞-in. wood plus ⅛-in. top material), is made for other thicknesses on special order.



Inside Corners

5-IS, shown, is $\frac{11}{16}$ in. by $\frac{11}{16}$ in. 9-IS has a right angle cover to match 10-S ¾ in. flat top. Size ¾ in. by ¾ in.



Outside Corners

10-OS, $\frac{11}{16}$ in., illustrated. Also made ¾ in. by ¾ in., 12-OS; and 1¼ by 1¼ in., 16-OS.

WILSON METAL PRODUCTS CO.

Extruded Aluminum Alloy Metal Trim

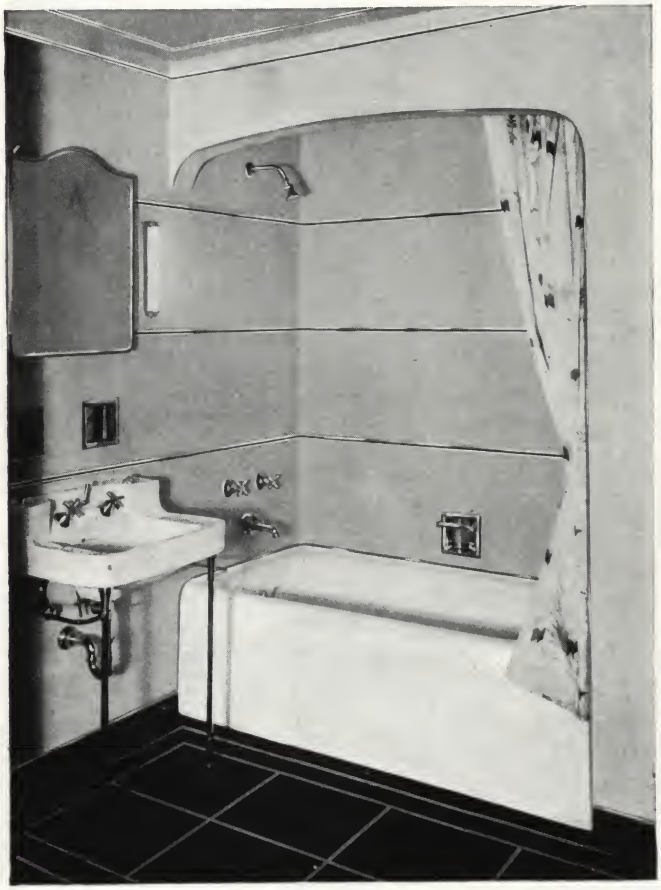
337-339 East Town Street

COLUMBUS, OHIO

NOSINGS, EDGINGS, COVES AND DECORATIVE BAR MOLDINGS

Wilson Metal Trim is offered in a wide variety of shapes, each designed to fill a definite need in protecting the exposed edges and corners of linoleum, rubber tile, asphalt tile, wall board, plywood, Formica, Micarta, and similar materials in all types of installation, at the same time affording a striking decorative effect.

Wilson Metal Trim is a special alloy of virgin aluminum and other metals, producing a superior quality white metal. Heat-treated to the proper degree of hardness to retain its beautiful finish and withstand hard wear, yet tempered to allow for easy bending around corners, arches or curved surfaces. It is a solid metal (not plated) and on interior work will not tarnish or corrode.



The unusual beauty of this bathroom is contributed to in no small degree by the judicious use of Wilson Metal Trim. The linoleum faced wall trim No. 61 is particularly effective. No. 51 single flange exterior corner used around the arch bends easily, flatwise, without any cutting of the metal. No. 10 serves for the cove base cap, and No. 11 as a waterproofing cove around the bathtub.

For decorative appearance, style, ease of application and practicability, special attention is called to our patented linoleum insert shapes in the number 50, 52, 53, 55, 56, 57 and 58 series originated by us and covered by U. S. Patent No. 2030730. On all of these shapes, the fastening screws are concealed by the accurately fitted linoleum inserts which we furnish with the molding in any linoleum colors desired. These shapes, except the No. 55 series, fit down on top of whatever material is being used; all can be easily bent around corners without any cutting of the metal and installed very quickly, thereby cutting down labor costs as compared with flange type nosings.

Finishes Available

Regular Finishes—(1) Highly polished luster. (2) Dull satin. (Highly polished luster is furnished unless otherwise specified.)

Alumilite Finish—A special treatment which hardens the surface of the metal and prevents any smudging or rubbing off black on white clothing. This is a beautiful satin finish for especially high grade work. It is highly desirable for sink front nosing. Alumilite finish carries an extra cost.

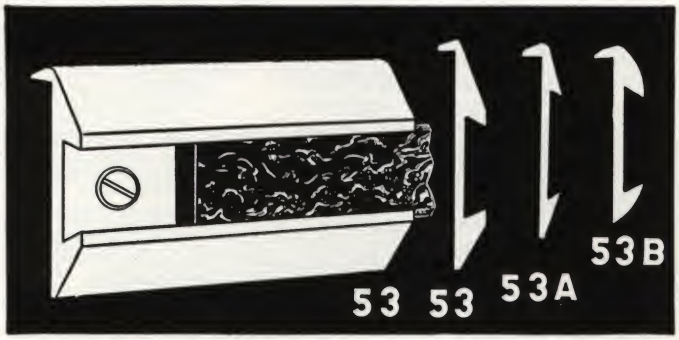
A recreation room in modern style. Three separate bars of Wilson Metal Trim No. 61 with black linoleum insert have been used to give the walls the streamlined effect. No. 56 with two black linoleum inserts has been used effectively as a casing around the bar opening and the door at the right. Three bars of No. 56 set tightly together are used low on the wall underneath the bar.

Stocks Available

For prompt service, stocks are carried in the principal large cities by our distributors, or we can usually make shipment direct the same day an order is received.

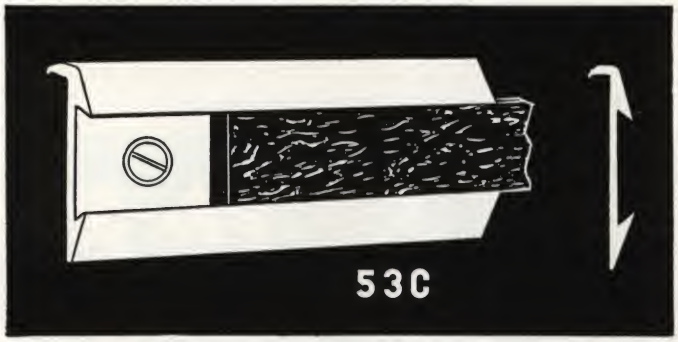
COUNTER, TABLE AND SINKBOARD NOSINGS AND WAINSCOT CAPS WITH LINOLEUM INSERTS

(Illustrations Actual Size) (Pat. 2030730)



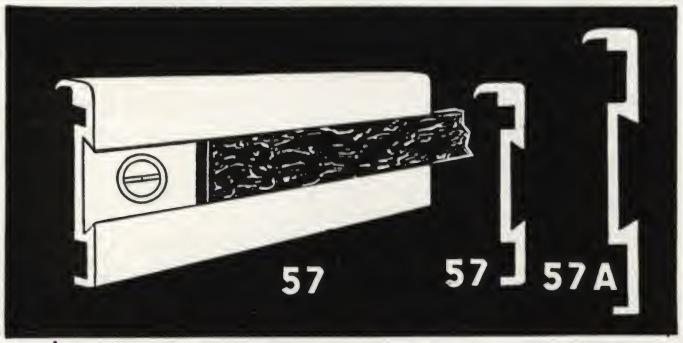
Drip Proof Nosings—Easy to install on sink drainboards, counters and tables. Also used for wainscot caps.

No. 53—for 1⅛ in. thick tops. } Standard or medium gauge in-
No. 53B—for ¾ in. thick tops. } serts, ½ in. wide. [wide.
No. 53A—for ⅞ in. to 1 in. tops. Inserts, wall linoleum, ½ in.



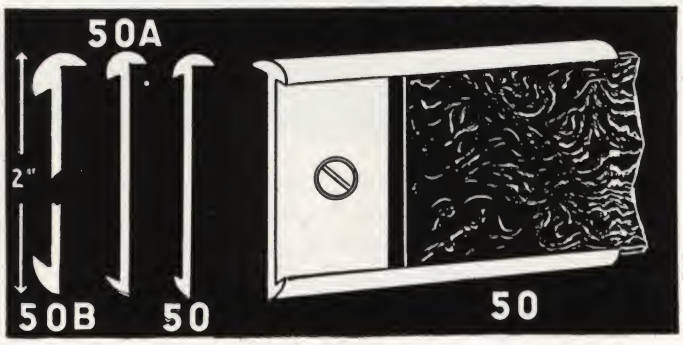
Drip Proof Nosing—Easy to install on sink drainboards. Point on lip bites into top material.

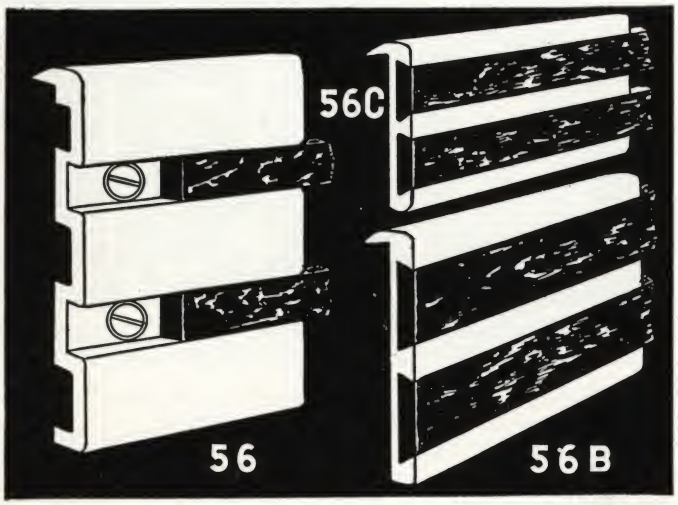
No. 53C—for ⅞ in. to 1 in. thick tops. Insert strip of standard gauge linoleum, ½ in. wide.



Drip Proof Nosings—Easy to install on sink drainboards. Point on lip bites into top material.

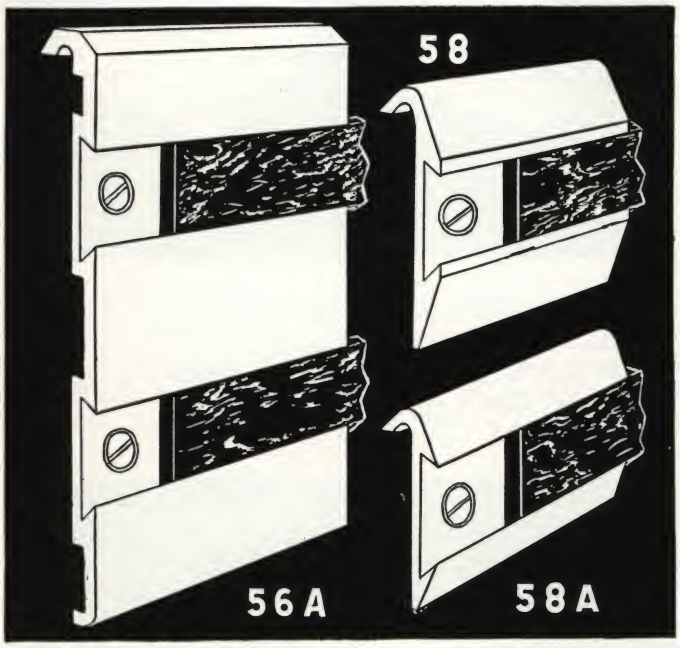
No. 57—for 1 in. thick tops. Standard gauge insert ⅜ in. wide.
No. 57A—for 1½ in. thick tops. Standard gauge insert ½ in. wide.





Counter Nosings for thick counter tops.

No. 56—for counter tops up to 2 in. thick, two ¼ in. inserts, standard gauge linoleum.
No. 56B—for 1¼ in. thick tops, two ⅜ in. inserts, standard gauge linoleum.
No. 56C—for ¾ in. to ⅞ in. thick tops, two ¼ in. inserts, standard gauge linoleum.



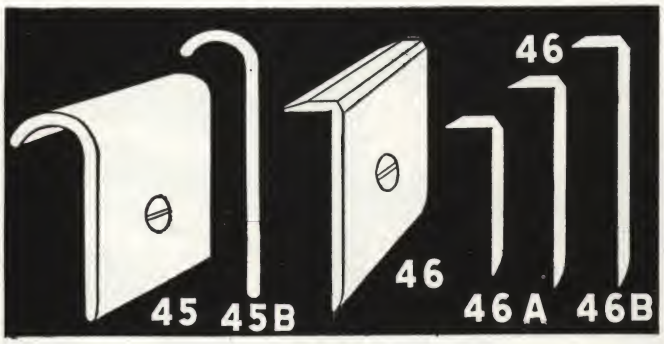
Drip Proof Nosings—Easy to install on sink drainboards, counters and tables. Have ⅛ in. high drip proof lip.

No. 56A—for counter and bar tops up to 3 in. thick, two ½ in. inserts, standard gauge. Has ⅛ in. high drip proof lip.
No. 58—for 1¼ in. thick tops, insert, standard gauge, ½ in. wide.
No. 58A—for ⅞ in. to 1 in. thick tops, ½ in. standard gauge insert.

At left: Drip Proof Nosings—Easy to install on sink drainboards, counters and tables.

No. 50—for 1⅛ in. thick tops. Will bend to small radius. Wall linoleum insert strip 1 in. wide.
No. 50A—for 1⅛ in. thick tops. 1 in. insert, standard gauge.
No. 50B—for 2 in. thick tops. 1½ in. insert, standard gauge.

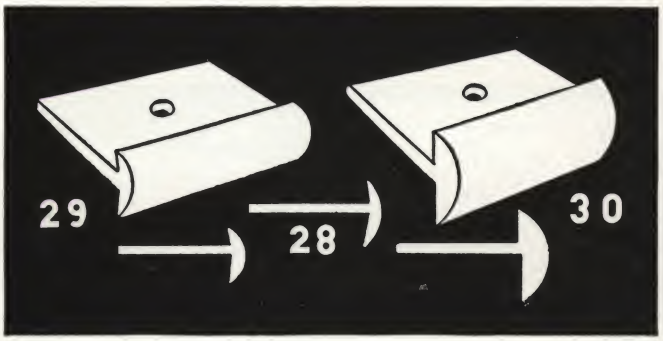
COUNTER AND TABLE TOP NOSINGS, SPECIAL SINK NOSINGS



Drip Proof Counter or Sink Front Nosings—very easy to install.

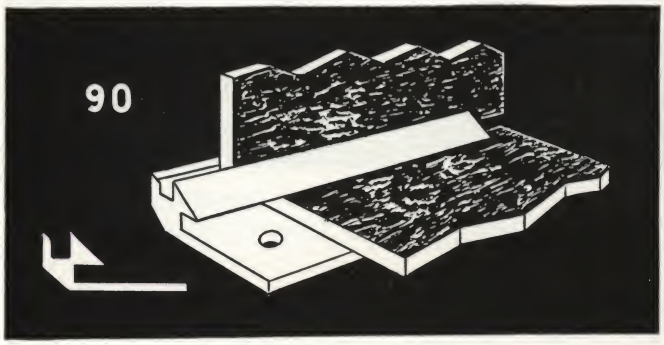
No. 45—covers a ¾ in. to ⅞ in. thick top.
No. 45B—covers a 1¼ in. thick top.
No. 46—covers a 1⅛ in. thick top.
No. 46A—covers a ¾ in. thick top.
No. 46B—covers a 1¼ in. thick top.

Oval head, aluminum screws furnished.



Reversible, Table or Counter Nosings.

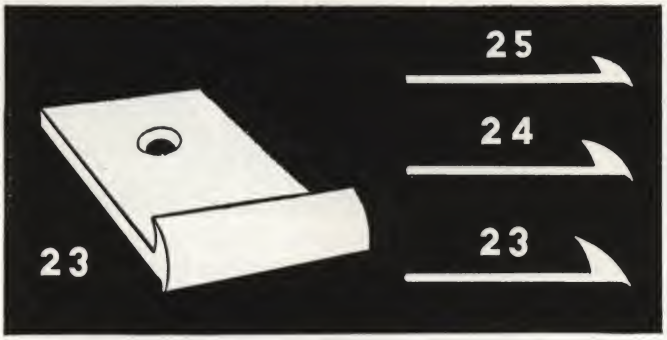
No. 28—for ⅛ in. and $\frac{3}{16}$ in. materials.
No. 29—for medium gauge and ⅛ in. materials.
No. 30—for $\frac{3}{16}$ in. and ¼ in. materials.



Interior Corner for junction of sink drainboard and splashback. Especially designed to overcome linoleum pulling away from splashback due to wood shrinkage in new construction.

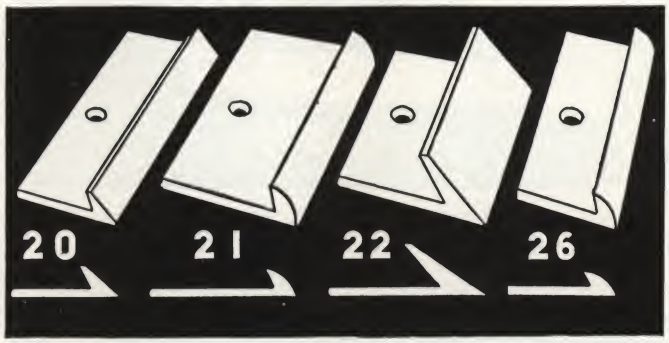
No. 90—for medium gauge linoleum.
No. 90A—for standard gauge linoleum.

One-piece frames for flat rim sinks, corners formed and ends welded, will be furnished at slight additional cost if accurate outside dimensions of the sink rim are given or a pattern furnished us.



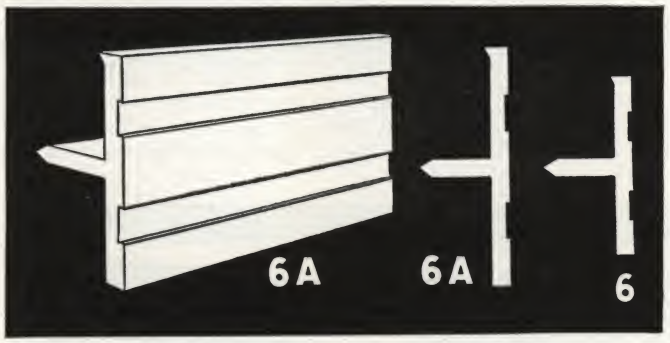
Flat Rim Sink Nosings, with extra long flanges.

No. 23—for $\frac{3}{16}$ in. materials.
No. 24—for ⅛ in. materials.
No. 25—for medium or standard gauge linoleum.



Doorway Edgings or Caps for flash type linoleum cove base.

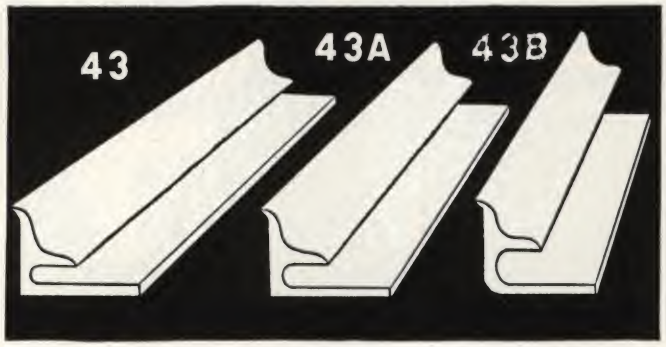
No. 20—for medium gauge linoleum.
No. 21—for medium gauge linoleum.
No. 21A—same as No. 21, except for ⅛ in. materials.
No. 22—for 6 mm or $\frac{3}{16}$ in. materials.
No. 26—for standard gauge linoleum and felt base.



"T" Nosings for inserting in saw cut in counters and table tops. For all generally used thicknesses of materials. Flange to be inserted in saw cut is $\frac{3}{32}$ in. thick and tapered to a point to facilitate driving home.

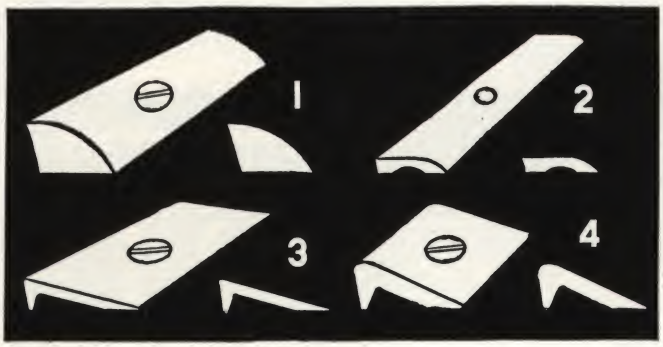
No. 6—with $\frac{15}{16}$ in. face, two grooves, $\frac{5}{32}$ in. wide.
No. 6A—with 1¼ in. face, two grooves, $\frac{3}{16}$ in. wide.

SANITARY COVES, BUTT EDGINGS, CORNER NOSINGS, DOORWAY EDGINGS AND CAP MOLDS



Coves, solid backs, designed especially for junction of sink drainboard and splashback

No. 43—for standard or medium gauge linoleum.
No. 43A—for ⅛ in. materials.
No. 43B—for $\frac{3}{16}$ in. materials.

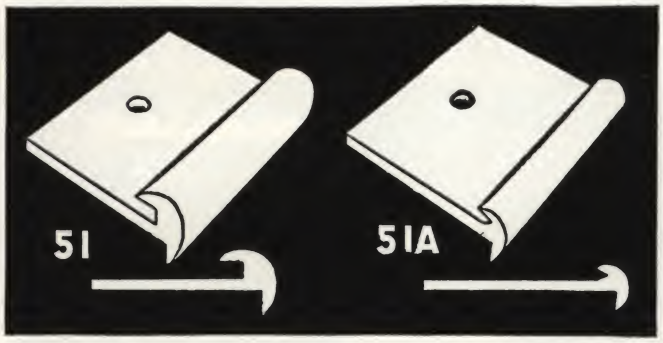


Butt Edgings.

No. 1—for ¼ in. thick material. Also used as quarter round.
No. 2—for use with standard gauge linoleum, and felt base.
No. 2A—for ⅛ in. materials, ¾ in. wide, with flat slope.
No. 2B—for $\frac{3}{16}$ in. materials, ⅞ in. wide, with flat slope.
No. 3—for ⅛ in. asphalt tile, rubber or linoleum.
No. 4—for $\frac{3}{16}$ in. asphalt tile, rubber or linoleum.

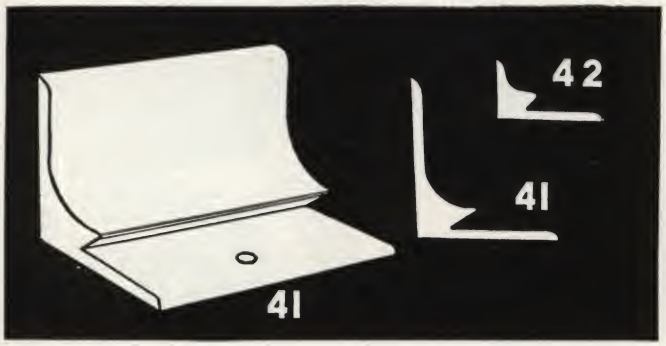
Sanitary Coves—for use where a rounded corner is desirable on floors or at junction of sink drainboard and splashback.

No. 40—1 in. high, for medium or standard gauge linoleum.
No. 40A—same as No. 40, slot for ⅛ in. materials.



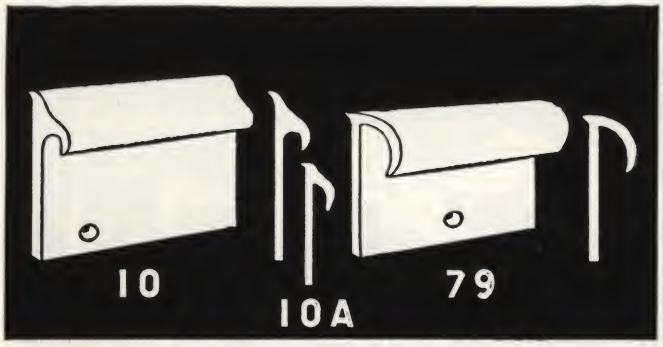
Corner Nosings—Easy to bend flatwise around curves and arches without cutting flange.

No. 51—for table, counter and sink top installation and for exterior wall corner; for standard gauge linoleum.
No. 51A—Exterior wall corner for standard wall linoleum.



Sanitary Coves, notch type—solid backs to fit tight against wall.

No. 41—⅞ in. high, for medium or standard gauge linoleum.
No. 42—small cove trim for interior wall corners and certain type of sink top installations, for standard or medium gauge linoleum.

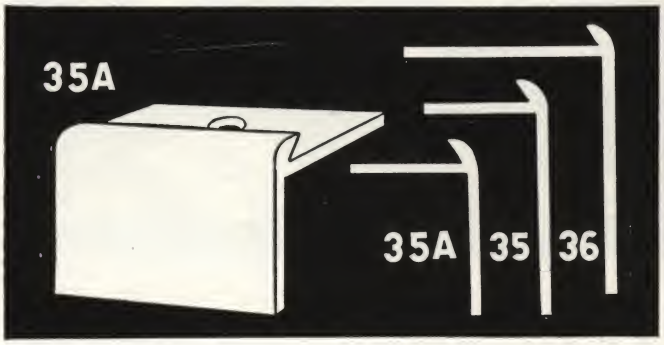


Cap Molds—for flash type cove base and wainscots.

No. 10—for standard or medium gauge linoleum.
No. 10A—wainscot cap for standard gauge linoleum and wall linoleum.
No. 79—for ⅛ in. wallboard—and for ⅛ in. thick flash type cove base of linoleum or rubber.
No. 79B—for $\frac{3}{16}$ in. wallboard (not illustrated).

STAIR NOSINGS AND STRAIGHT FACE NOSINGS

Where sink drainboard is set on top of the sink rim, it is necessary to use a nosing at this point similar to No. 38 or No. 31. These may be bent around corners by notching flange as shown on page 8.



Straight Face, Counter, Table or Sink Front Nosings.

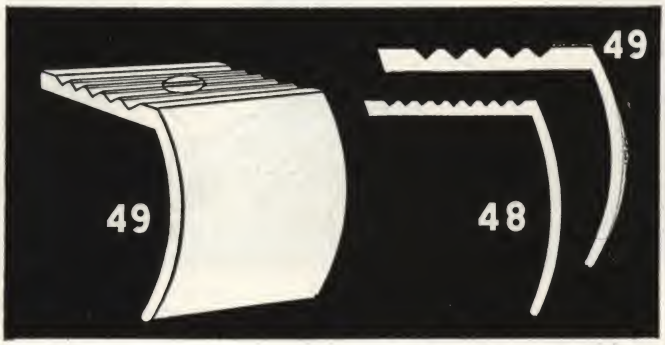
No. 35—for medium gauge or ⅛ in. thick material and 1 1/16 in. thick tops.

No. 35A—for ⅛ in. thick material and ¾ in. thick tops.

No. 36—for ⅛ in. thick material and 1¼ in. thick tops.

No. 36A—for 3/16 in. thick material and 1¼ in. thick tops.

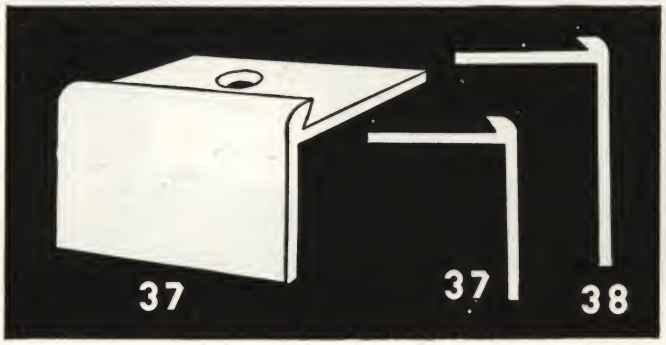
No. 36B—for standard gauge linoleum and 1¼ in. thick tops.



Curved Face Stair Nosings—Butt type with non-slip tread. Easy to install and will overcome breakage where asphalt tile treads are used.

No. 48—with fine grooves and 3/32 in. thick tread.

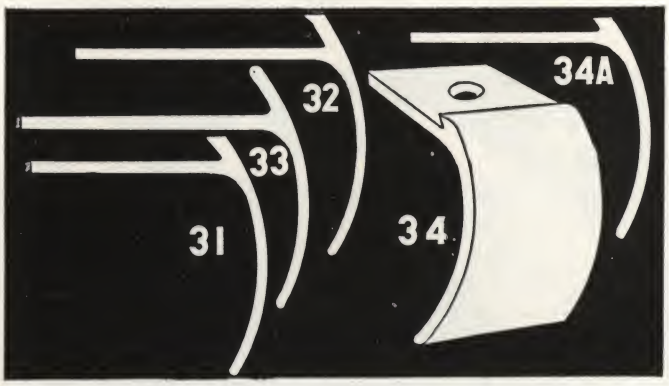
No. 49—with coarser grooves and ⅛ in. thick tread.



Straight Face, Counter, Table or Sink Front Nosings.

No. 37—for standard or medium gauge linoleum and ¾ in. thick tops.

No. 38—for standard or medium gauge linoleum and 1 1/16 in. thick tops.



Curved Face Stair Nosings, also used for counters and sink tops. Depth under flange, 1 in.

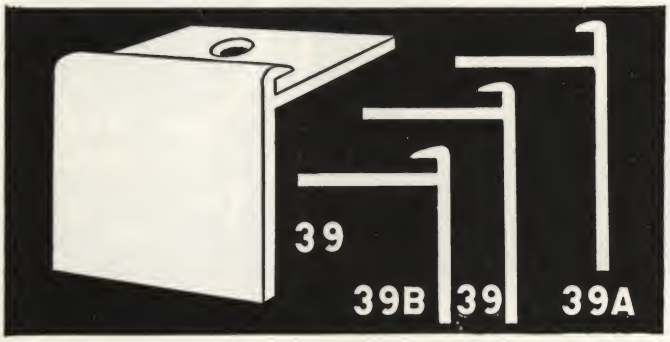
No. 31—for ⅛ in. material.

No. 32—for 3/16 in. material.

No. 33—for ¼ in. material, 1 1/8 in. under flange.

No. 34—with short flange, for medium gauge or ⅛ in. linoleum.

No. 34A—for standard or medium gauge linoleum.

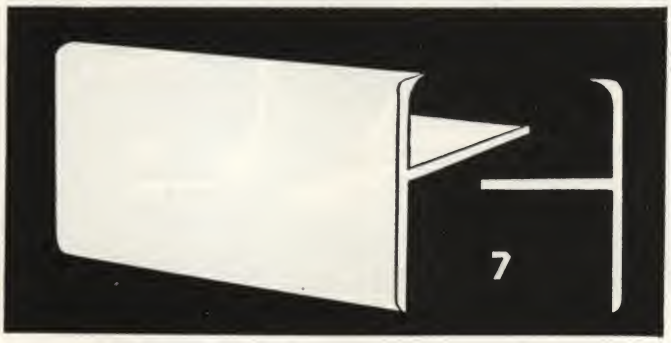


Straight Face, Counter, Table or Sink Front Nosings, with slot to receive linoleum.

No. 39—for standard gauge linoleum and 1 1/16 in. thick tops.

No. 39A—same as No. 39, except with slot for medium gauge or ⅛ in. material.

No. 39B—for standard gauge linoleum and ¾ in. tops.

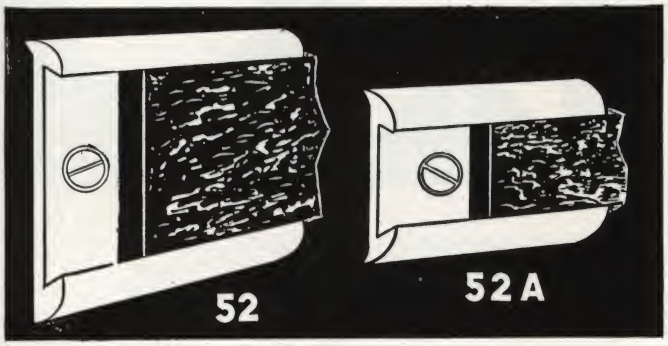


Straight Face, Counter or Table Nosing, 1¼ in. face.

No. 7—for use with all generally used thicknesses of materials. Flange is 1/16 in. thick to be driven into saw cut in edge of counter at proper place to accommodate the thickness of counter top material used.

NOSINGS AND WAINSCOT CAPS, WITH LINOLEUM INSERTS, WALL TRIM, THRESHOLDS AND BINDER BARS

Often a specific purpose requires the slight alteration of a shape. Whenever possible, this is done by us without charge.

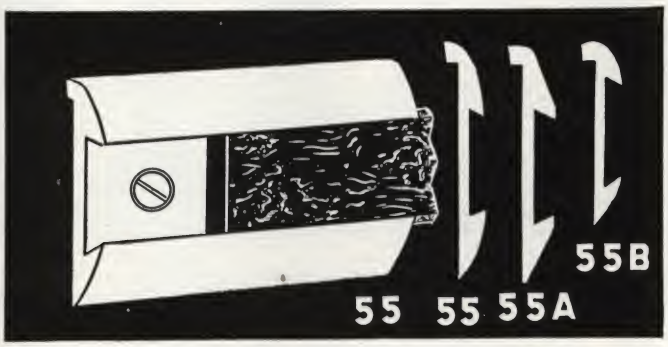


(Patent No. 2030730)

Wainscot Caps or Nosings, flush joint with top type. Effective, decorative wall trim.

No. 52—for up to 1½ in.. thick tops—1 in. wide linoleum insert.

No. 52A—for ¾ in. thick tops—½ in. wide linoleum insert.



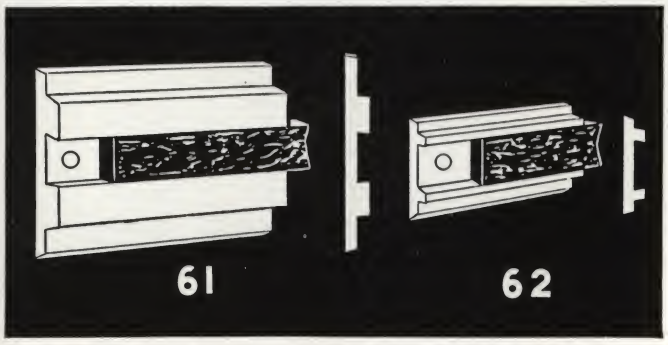
(Patent No. 2030730)

Table or Counter Nosings, flush joint with top type.

No. 55—for medium gauge linoleum and 1⅛ in. thick top.

No. 55A—for ⅛ in. linoleum or rubber and 1⅛ in. thick top. Takes ⅛ in. thick insert.

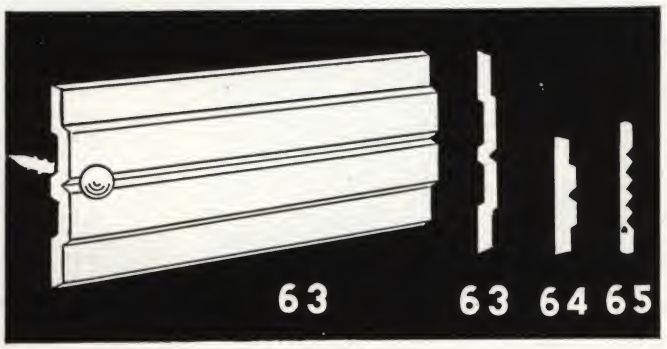
No. 55B—for medium gauge linoleum and ¾ in. thick top.



Decorative Bar Moldings and Wainscot Caps.

No. 61—1$\frac{1}{16}$ in. wide, with ¼ in. wide linoleum insert to cover nailheads.

No. 62—$\frac{5}{16}$ in. wide, with ¼ in. wide linoleum insert to cover nailheads.



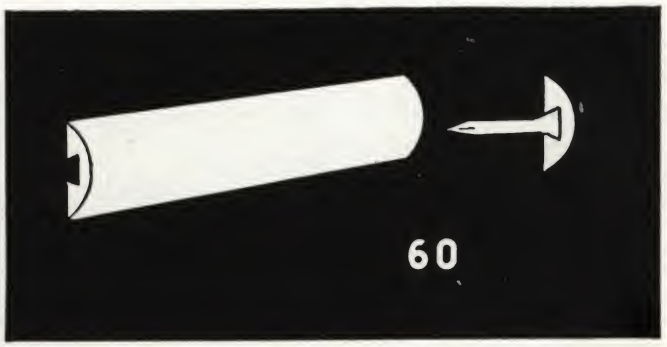
Decorative Bar Moldings of modern design.

Very easily applied with polished aluminum escutcheon pins, which are furnished with molding.

No. 63—1$\frac{1}{16}$ in. wide.

No. 64—⅝ in. wide.

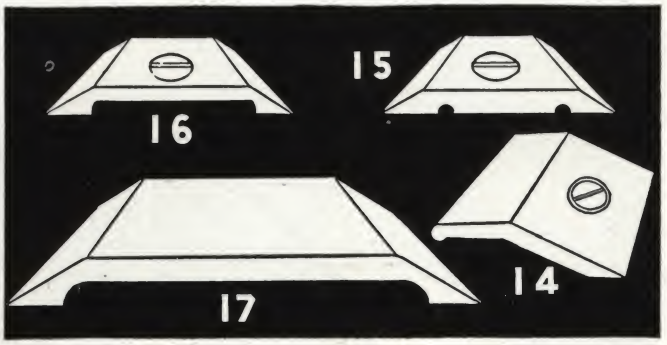
No. 65—¾ in. wide.



Tap-on Decorative Oval Bar Molding. Used for decorative treatment to walls, fixtures, bar fronts, etc.

No. 60—½ in. wide, ⅛ in. thick.

Special nails furnished with molding.



Binder Bars and Thresholds.

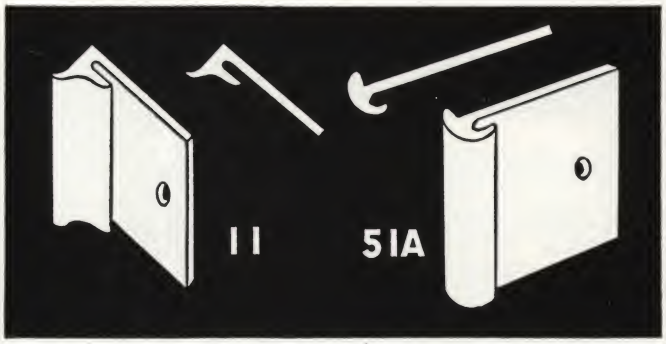
No. 14—Carpet Binder Bar.

No. 15—Bevel Binder Bar, 1¼ in. wide, ⅛ in. thick—used as parting strip for covering joints or seams—as decorative bar or small threshold.

No. 16—Bevel Floor Plate, threshold type, 1⅜ in. wide, ⅛ in. thick—used same as No. 15.

No. 17—Threshold, 2½ in. wide, ¼ in. thick. For doors 1¾ in. to 1⅞ in. thick.

EXTERIOR AND INTERIOR CORNERS AND DIVISION BARS

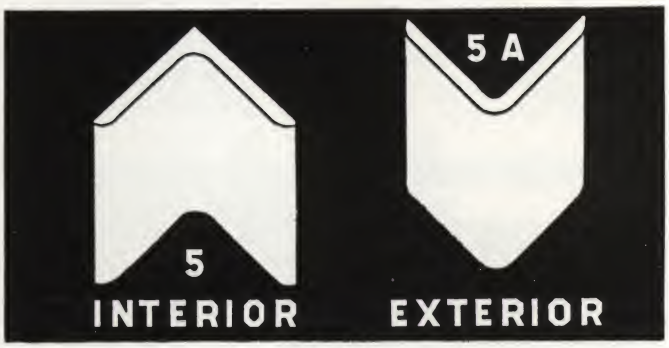


Interior Wall Corner, single flange type.

No. 11—for wall linoleum.
Also used for metal trim around bathtub.

Exterior Wall Corner, single flange type.

No. 51A—for wall linoleum. Bends flatwise around arches without cutting of metal.

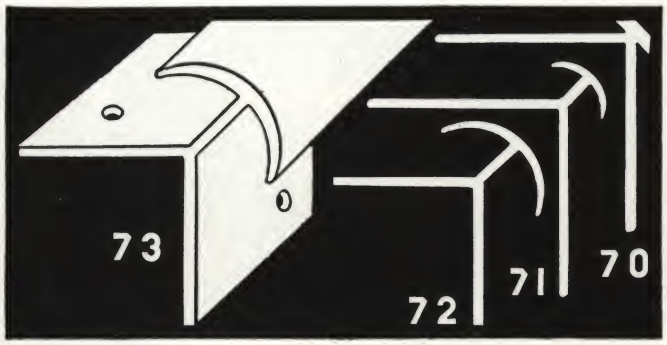


Exterior and Interior Angles.

No. 5—Interior—size: outside ¾ in., inside ⅝ in.

No. 5A—Exterior—size: inside $1\frac{1}{16}$ in., outside ¾ in.

Fastened with aluminum escutcheon pins or oval head aluminum screws.



Exterior Wall Corners—double flange type.

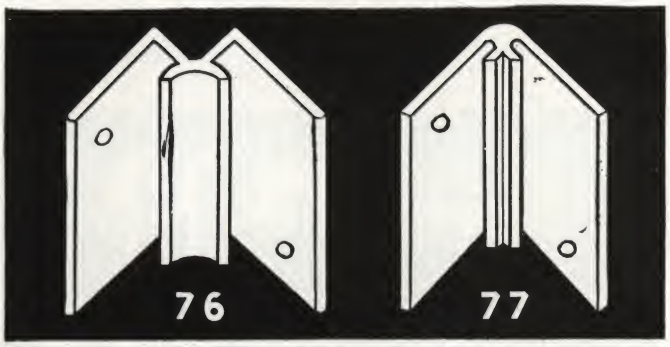
No. 70—for standard wall linoleum.

No. 71—for ⅛ in. wallboard or imitation tile board.

No. 71B—for $\frac{3}{16}$ in. wallboard (not illustrated).

No. 72—for ¼ in. plywood, or other material.

No. 73—for ⅜ in. plywood, or other material.

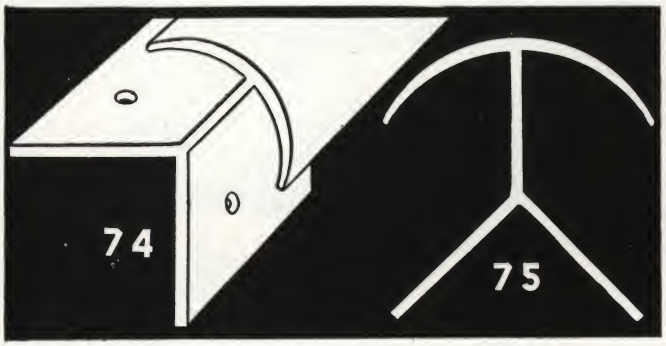


Interior Wall Corners, double flange type. No. 76 is also used as cove at junction of drainboard and splashback.

No. 76—for ⅛ in. wallboard or linoleum.

No. 76B—for $\frac{3}{16}$ in. wallboard (not illustrated).

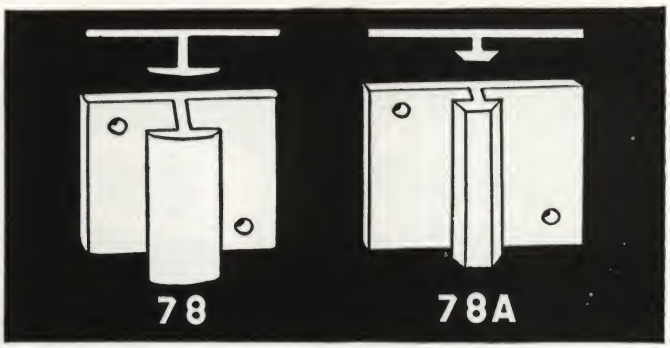
No. 77—for $\frac{1}{16}$ in. standard wall linoleum.



Exterior Counter or Showcase Corners for Plywood.

No. 74—for ½ in. plywood.

No. 75—for ¾ in. plywood.



Division Bars.

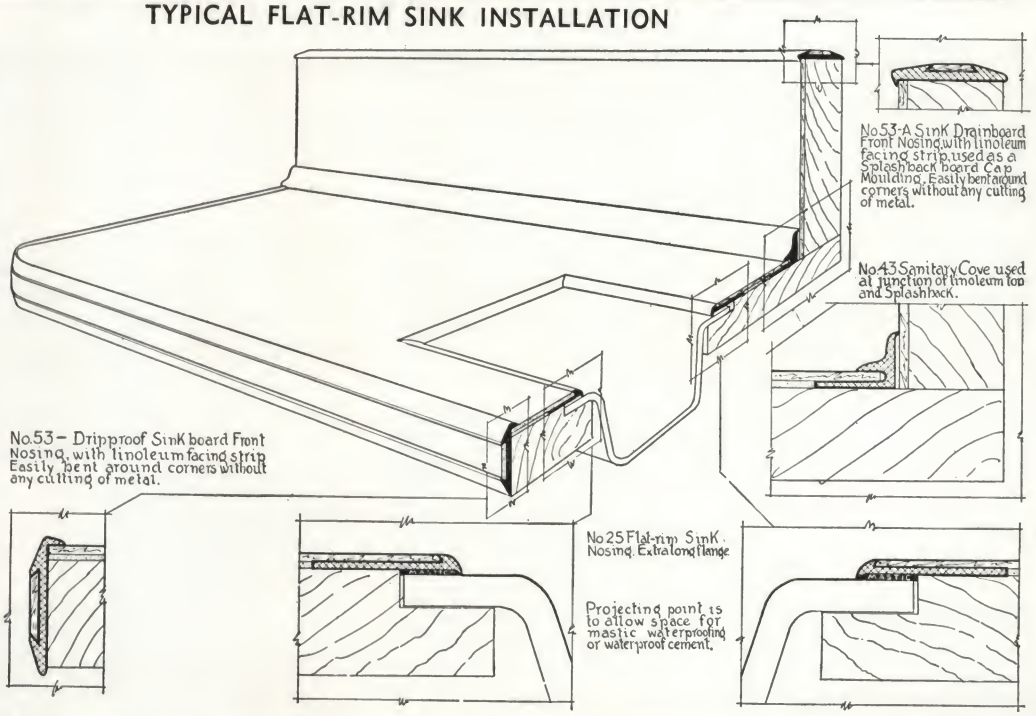
No. 78—for ⅛ in. wallboard or linoleum.

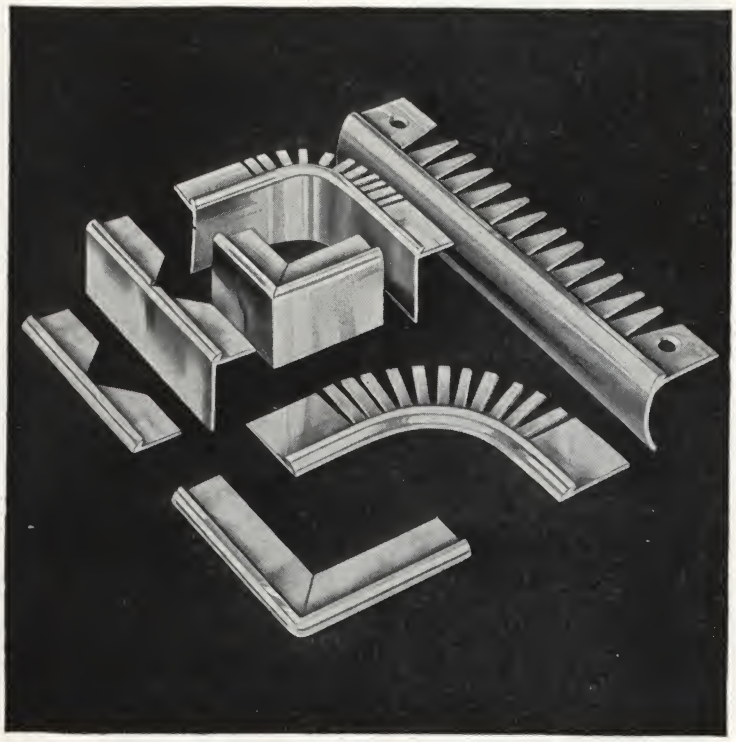
No. 78A—for $\frac{1}{16}$ in. standard wall linoleum.

No. 78B—for $\frac{3}{16}$ in. wallboard (not illustrated).

TYPICAL FLAT-RIM SINK INSTALLATION

At the right is shown an installation of linoleum sink top and splashback. Drainboard is rabbetted ¼" deep to make top surface of sink rim **flush** and perfectly level with top surface of drainboard. No. 25 metal edging is used as shown. Wilson's Waterproof Sink Cement should be used under the No. 25 edging and on top of the flange to thoroughly seal against moisture seepage to lino'eum. Corners of No. 25 edging may be mitred as shown or formed to rounded corner by notching flange as illustrated on this page. No. 43 cove is used where top meets splashboard. The outside edge nosing is No. 53 with linoleum insert to cover screws. No. 58, No. 38, or No. 39 may also be used on 1⅛" tops with standard gauge linoleum. Outside nosings should be Alumilited.





Slotting and Cutting of Flanges

Illustration shows various ways of slotting and cutting flanges to bend around curves and corners. A small, fine-toothed hacksaw is best for this work

(Above) Wilson Metal Trim as used to give a streamlined effect in a modern kitchen and breakfast nook in a Columbus, Ohio, residence. Sink drainboard and splashback is one continuous piece of cherry red linoleum with cove corner. Note that on front edge of drainboard No. 53 nosing with cherry red linoleum insert continues around top of breakfast room seat as a finish molding. Lower edge of seat is finished with Wilson Metal Trim No. 56 with two harmonizing linoleum inserts. No. 43 serves as metal cove at floor line, and the exterior upright corner from floor to edge of seat is finished with No. 51A. Cap mold for cove base is No. 10. Metal trim around niches is No. 57, while No. 53C with cherry red linoleum insert is used for the table edge trim. The linoleum seat and back is designed in colors to produce an effect that is distinctive and in keeping with the general streamlined appearance.

Specifications

For the installation of Wilson Metal Trim in connection with any material will be furnished on request.

YOUNGSTOWN MANUFACTURING, INC.

Manufacturers of Superior Metal Mouldings

70-76 South Prospect Street

YOUNGSTOWN, OHIO

All Superior Metal Mouldings, except as otherwise noted in this catalog, are made of a special heat treated Alloy of Virgin Aluminum and other metals. A Solid White Metal (not plated) which will retain its highly polished finish and is easy to work with.

Regular Finish

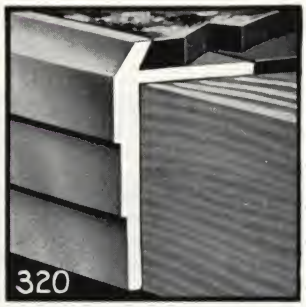
Standard finish is highly polished luster. Satin finish may be had on special order at no extra cost.

Alumilite Finish

This is a special process which hardens the surface of the metal giving it a Satin-like finish. We recommend Alumilite finish for all high grade work, particularly for Sink Fronts as it will not rub off black. See price list for extra cost of Aluminiting.

Ask for Complete Catalog.

Superior Straight Face Nosings for Counters, Tables, Sink Fronts, etc.



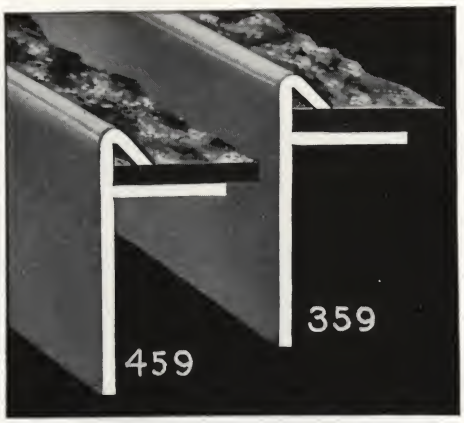
Left: **De Luxe Nosings**

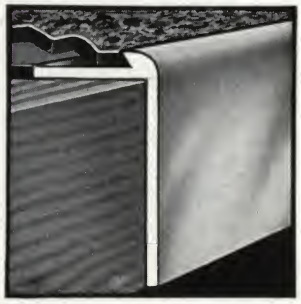
No. 320—Depth of face 1 1/16". For 1/8" material.

Right: **Non-Drip Nosings**

No. 359—Depth of face 1 1/16". For standard or medium gauge linoleum.

No. 459—Depth of face 1 1/16". For 1/8" mat.





Left:

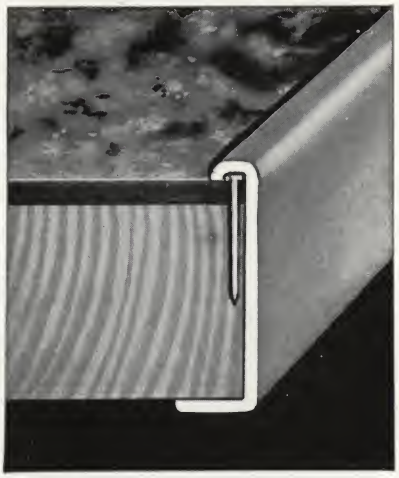
No. 20—Depth of face 1 1/16". For 1/8" material.

Right: **Non-Drip Nosings**

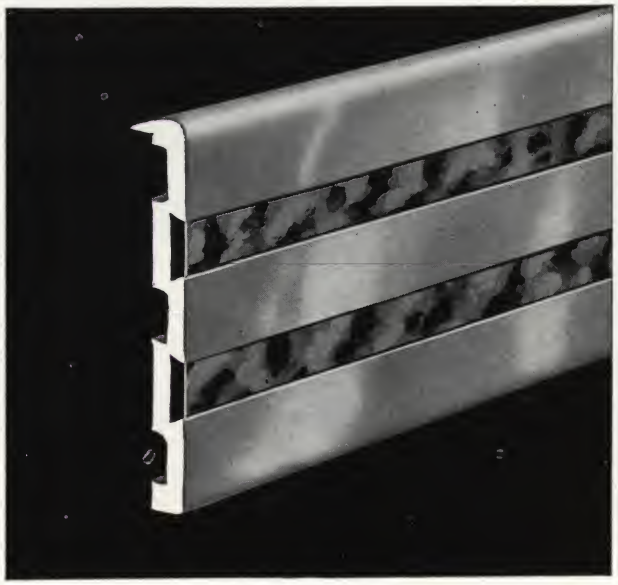
No. 57—Non-Drip Nosings. 13/16" between flanges.

No. 58—Same as above except 1 3/32" between flanges.

To install drive few brads at end of counter as illustrated leaving heads project. Slip on nosings and nail from bottom.



Superior Linoleum Faced Nosings



Left:

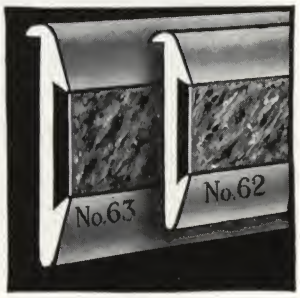
No. 263—Linoleum faced overlap nosing. Standard guage linoleum inserts 1/4" wide. Depth of face 2".

Right:

No. 62—Linoleum faced overlap nosing. Standard gauge linoleum insert 5/8" wide. Depth of face 1".

No. 63—Same as above except depth of face 1 3/16".

No. 60—Same as above except depth of face 13/16".



Superior Doorway and Sink Edgings

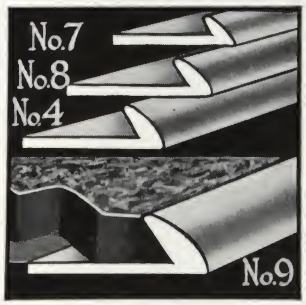
Butt Edgings

No. 14—For ⅛" material.

No. 15—For $\frac{3}{16}$" material.

No. 16—For ¼" material.

Furnished in solid brass also.



Doorway Edgings

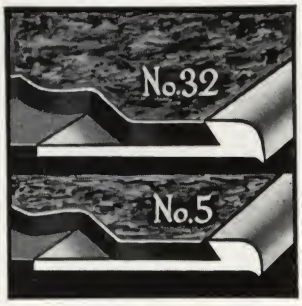
No. 7—For standard gauge linoleum.

No. 8—For ⅛" material or medium gauge linoleum.

No. 4—For $\frac{3}{16}$" material.

No. 9—For ¼" material.

Also solid brass.



Sink Edgings

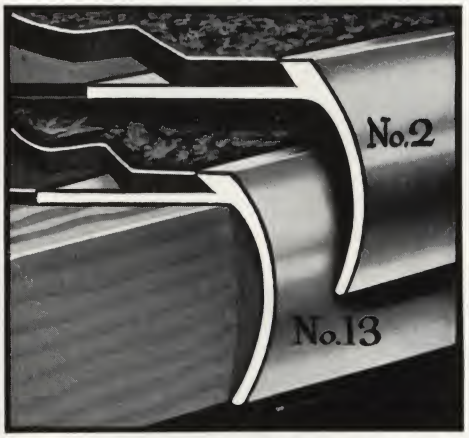
No. 5—Wide Flange Edging for standard or medium gauge linoleum.

No. 32—Same as above except for ⅛" material.

No. 6—Same as above except for $\frac{3}{16}$" material.

Especially adapted for use around Flat Rim Sinks.

Superior Stair Nosings



No. 2—For ⅛" material.

No. 13 — For Standard and Medium gauge linoleum.

Furnished in solid brass also.

Butt Type Nosings

No. 54—For ⅛" material.

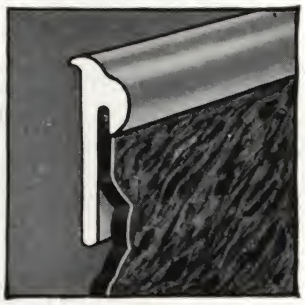
No. 55—For $\frac{3}{16}$" material. Top flange 1¼". For use with rubber-tile-linoleum. Easy to install and will eliminate breakage where asphalt tiles are used.

Furnished also in solid brass.

Superior Cove Mouldings

No. 131

No. 42 and No. 342



No. 140 Cap

No. 131—Low price cove base or wainscot trim. Also used for doorways. Width overall ¾". Easy to install.

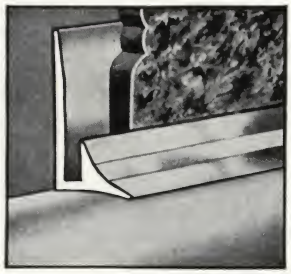
No. 42—Cove for ⅛" material or medium gauge linoleum. Exposed surface ⅜".

No. 342—Same as above except for $\frac{3}{16}$" material.

No. 140—Cap, for standard or medium gauge linoleum.

No. 340—Same as above except for ⅛" material.

Wall and Tile Board Trims



No. 542

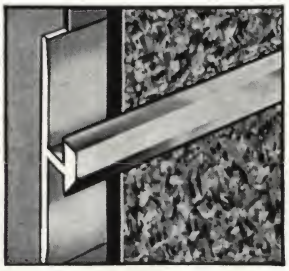
No. 550—Division Bar for ⅛" material. Stock lengths 8 ft.

No. 551—Cap Mold for ⅛" material. Stock lengths 8 ft.

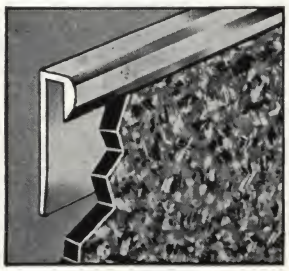
No. 542—Bath Tub Edge for ⅛" material. Stock lengths 8 ft.

No. 552—Outside Corner for ⅛" material. Stock lengths 8 ft.

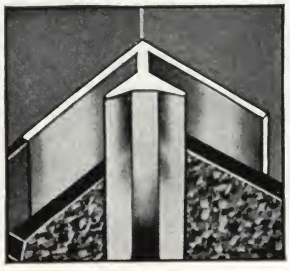
No. 553—Inside Corner for ⅛" material. Stock lengths 8 ft.



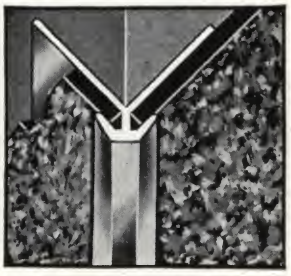
No. 550



No. 551



No. 553



No. 552

Superior Counter Nosings

For Counters, Cabinets, Sink Tops, etc. Used with Linoleum, Pressed Wood, Formica, etc.

No. 239—Depth of face inside ⅞".

No. 240—Depth of face inside 1".

No. 241—Depth of face inside 1⅛".

No. 244—Depth of face inside 1¼".

No. 243—Depth of face inside 1½".

No. 200 Stainless Steel Cove and Wainscot Cap

Superior Stainless Steel Snap On Mouldings

Flat Top

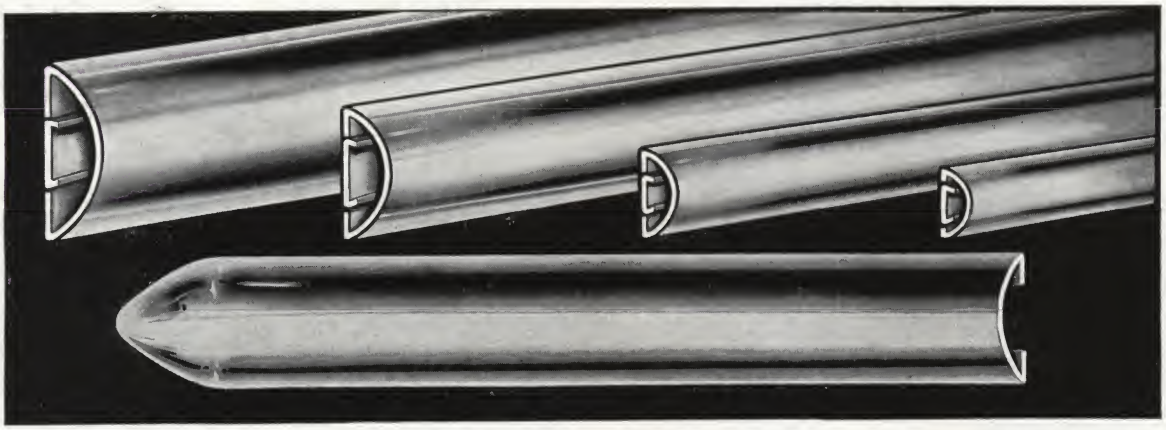
No. 220—⅜"
No. 222—½"
⅛" high

No. 224—¾"
No. 226—1"
⅛" high

No. 227—1¼"
No. 228—1½"
$\frac{3}{16}$" high

No. 229—1¾"
No. 230—2"
$\frac{3}{16}$" high

Half Round



No. 205—⅜"

No. 207—½"
$\frac{3}{16}$" high

No. 209—¾"

No. 211—1"

ACME ASBESTOS COVERING & FLOORING CO.

INCORPORATED 1907

MANUFACTURERS AND CONTRACTORS

TELEPHONE
MONroe 2342-44

250 North Elizabeth Street, CHICAGO, ILL.

NEW YORK OFFICE
30 Church Street

ACMETYLE
A *Lifetime* FLOORING
AT LOW COST

What Is Acmetyle?

Acmetyle is a modern magnesia flooring, composed of magnesia, asbestos, and an aggregate of other finely graded minerals.

Laid as a plastic in two layers, each usually ¼ in. thick, it forms a beautiful, life-long monolithic flooring, with a finished surface that is smooth, durable and *not* slippery.

Low Cost—Acmetyle floors may be laid at the lowest cost of any permanent flooring; and they are *free* from maintenance cost.

High Performance Rating—Fireproof . . . Waterproof . . . Oil-, Dust- and Germ-proof . . . Non-Dusting . . . Sanitary . . .Resilient . . . Non-Slippery . . . Easy and Comfortable under foot.

Where Should It Be Used?

Acmetyle is an ideal flooring in Hospitals, Hotels, Stores, Public Buildings, Institutions, Schools, Specialty Shops, Lodge and Dance Halls, and Residences, both new and old.

For Old Buildings—Acmetyle converts into modern, attractive surfaces, *old floors* of every type. It is laid directly over the old flooring (whether it be concrete or wood) without any expense for removal.

Outstanding Advantages

Beauty—10 rich, enduring colors, which may be combined to produce an unlimited range of striking and harmonious patterns.

Durability—Acmetyle floors which have been in constant use for the past 20 years promise to live indefinitely.

Color Selections

Acmetyle offers a wide variety of color combinations, selected from these ten bright, unfading colors:

Light Gray	Chromium Green
Chestnut Brown	Oak Buff
Light Brown	Dark Gray
Ultramarine Blue	English Red
Rich Brown	Carbon Black

Service and Samples

A competent Service Organization co-operates cheerfully and intelligently with Architects and their Contractors.

Samples of Acmetyle furnished without obligation, in any of the 10 standard colors. Technical information and estimates promptly submitted.

SPECIFICATION AND SUBFLOOR DATA FOR ACMETYLE MAGNESIA FLOORS

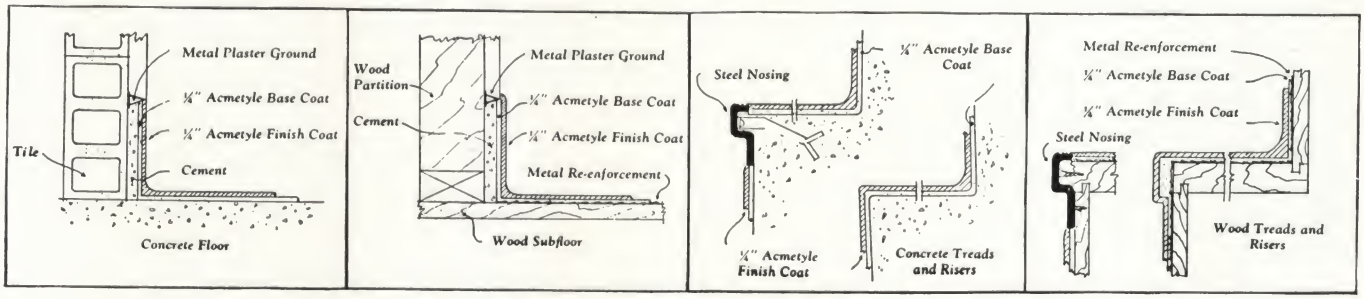
Specification—Acmetyle Magnesia Floors (and cove base) shall be furnished and installed by the ACME ASBESTOS COVERING & FLOORING CO., 250 North Elizabeth Street, Chicago, Ill., or its authorized agents, in two ¼-in. layers (or specified thickness) in such colors and patterns to be selected by the architect. All work shall be rubbed with steel wool and given one coat of liquid wax on completion.

Preparation for Acmetyle—The building shall be enclosed; plastering shall be completed; trim shall be set and stained. The temperature of rooms shall be at least 65° F. while the Acmetyle is being laid. It is important that the laying of Acmetyle be postponed as late as possible, as it is a finished material and must be protected if other trades are to work over it.

Concrete Subfloors—All subfloors shall be structurally sound, hard, clean, free from debris and bone dry. Specifications for concrete floors prepared by the Portland Cement Association are recommended. Concrete in steel stairways shall be at least 2 in. thick and reinforced. Slabs shall be brought to within ½ in. of the finishing line (or for other depths of flooring as provided by specifications) and be given a screed or float finish. Pitch desired in finished floor shall be provided in the slab. Cinder, lime, porous or wet concrete is not acceptable as a foundation for Acmetyle.

Wood Subfloors—Six-inch sheathing, not less than ⅞-in. thick, laid rough side up, fairly close together is preferable; must be well-seasoned, securely nailed and supported so that floor is firm and not springy. Metal reinforcer shall be furnished by the flooring contractor and nailed securely to the wood with roofing nails on 6-in. centers.

Backing for Wainscot and Cove Base—Acmetyle can be laid directly on brick, terra cotta, concrete and stone, all of which should be brought to within ⅜ in. of the finishing line; to bring same to the proper level use a 1:2 mix portland cement and sand not thinner than ¾ in. Acmetyle will not adhere to lime plaster or gypsum tile. Wood sheathing ⅞ in. or thicker may be used as above, securely nailed. Where Acmetyle base or wainscot is installed flush with plaster a wood or metal ground strip shall be installed by others to separate them.



MEMORANDA

KOMPOLITE CO., INC.

Flooring Manufacturers, Engineers and Contractors

SINCE 1900

111-115 Clay Street, BROOKLYN, N. Y.

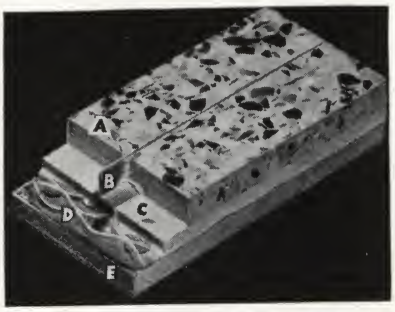
The KOMPOLITE CO., INC. has specialized in the manufacture and installation of many types of resilient floor-coverings for almost 40 years. The keynote policy of the company has been absolute integrity of business, product and craftsmanship. All manufacturing processes are carefully controlled to produce a uniform product of the highest quality. Mechanics who do the installation are all craftsmen with from 15 to 30 years' experience in their respective trades.

A careful study of the behavior of all types of flooring under various traffic conditions, for almost forty years, puts the company in a position to offer sound engineering advice on flooring problems.

Our engineers are available to you without obligation to assist in the selection of the most satisfactory and economical flooring for any specific service condition in old or new buildings.

KOMPOLITE PLASTIC MARBLE "CUSHIONED TO THE TREAD"

An Ideal Floor for "Modernization"—can be installed over any existing sub-floor including wood. Adds only 8 lbs. of weight per square foot.



Cutaway Section of Kompolite Plastic Marble

A—Kompolite Plastic Marble layer. B—Angled brass strip. C—Cushion undercoat. D—Metal lath over tar felt. E—Old floor

As beautiful in appearance as the finest marble; rich satiny surface of any desired color with brass dividing strips; binder of high tensile strength and flexibility with our exclusive Kompo-seal (integral hardener) which prevents penetration of dirty water and results in a tougher wearing surface. Cushion undercoat absorbs shock and deadens sound. Kompolite Plastic Marble lends itself to any architectural design. Its quick-setting permits installation without interference to business activities. Not a square foot of Kompolite Plastic Marble has worn out in over two million square feet installed in *department stores, churches, hospitals, restaurants, universities and schools.* Folder and specifications on request.

Modern Floor for Modern Effect

Kompolite Plastic Marble recently used to modernize the main floor of one of New York's largest department stores

A Million Square Feet Where Beauty and Durability Are Paramount

John Wanamaker, New York, N. Y.
Abraham & Straus, Brooklyn, N. Y.
The Namm Store, Brooklyn, N. Y.
Adam, Meldrum & Anderson Co., Buffalo, N. Y.
McCurdy & Co., Rochester, N. Y.
G. Fox, Inc., Hartford, Conn.
Anderson Newcomb Co., Huntington, W. Va.
J. A. Chapman, Milwaukee, Wis.
Cleland Simpson Co., Scranton, Pa.
Watt & Shand, Lancaster, Pa.
Penn Traffic Co., Johnstown, Pa.
Wm. Filines Sons Company, Boston, Mass.
Forbes & Wallace Co., Springfield, Mass.
Albert Steiger Co., Springfield, Mass.
Outlet Co., Providence, R. I.
F. W. Woolworth Co. Stores
Longchamps Restaurants, New York, N. Y.
Boulevard Cafeteria, Albany, N. Y.
Lüchow's Restaurant, New York, N. Y.
Clinton Trust Co., New York, N. Y.
Mount Sinai Hospital, New York, N. Y.
St. Patrick's Church, Newburgh, N. Y.
St. Joseph's Church, Newburgh, N. Y.
Fordham University, New York, N. Y.

KOMPOLITE OFFERS A COMPLETE FLOORING SERVICE

Kompolite Magnesite Composition Flooring

The service floor for service spaces. A seamless, sanitary, fireproof, resilient composition flooring of highest quality. Our Kompo-Seal (integral hardener) produces a tougher surface that resists wear and the penetration of moisture. The finest composition installed in a heavy layer with a triple-troweled finish by highly skilled and experienced mechanics.

A superior sanitary cove base for integral construction with rubber tile, asphalt tile or plastic marble floors.

"Hubbellite"

A Seamless Composition Floor entirely unaffected by water. Hubbellite is germicidal, fungicidal and algaecidal. It prevents the spread of "Athletes' Foot" making it highly desirable for locker rooms and areas around swimming pools. It is an ideal floor for wet areas as in kitchens, behind bars and soda fountains, etc. Hubbellite is absolutely spark-proof and is a good electrical conductor . . . *the right floor for industries where explosives and combustibles are handled.*

Portland Cement Terrazzo Flooring

Quality terrazzo installed in accordance with terrazzo specifications of the National Terrazzo and Mosaic Association.

Asphalt Tile Flooring—"Tile-Tex"

We are the authorized distributors of Tile-Tex tile, whose complete catalog appears in this edition *(see File Index).*

Rubber Tile Flooring

High quality rubber floor tile, moulded cove base, wainscot, cap, plinths, saddles, treads, risers and nosings, plain and marbleized colors in an unlimited variety of designs, installed by our skilled and experienced workmen.

"Kushionite"

Much deterioration and wear of resilient floor coverings is due to unevenness of underflooring. Kushionite, a leveling foundation which can be laid over any subfloor adds years of life to such flooring, and in many cases makes such an installation possible. It is a surfacing composition that levels worn or uneven floors of wood, concrete or steel and provides a perfect base for any resilient floor material. It is sound-deadening, tough, durable and economical. Trowel-applied, seamless, fireproof. Laid ¼ to 1 in. thick. Material sold in bulk, or installed.

Floor Construction with Kushionite

Folder on request

Specifications and Engineering Service Furnished on Request without Obligation

MARBLELOID, INC.

Flooring Specialists Since 1905
Manufacturers of and Contractors for Marbleloid Floorings
NORTH BERGEN, N. J.

MARBLELOID SERVICE, SPECIFICATIONS, SAMPLES AND GUARANTEE

We offer the architect, engineer or owner products that are the result of thirty-four years of specialization in the manufacture and installation of plastic magnesia floorings. Marbleloid floors are built upon technical research and knowledge. They are installed under rigid supervision. Our unique installation service provides fullest assurance to the architect that in specifying *"Marbleloid,"* he will have the work installed strictly according to his standard.

MARBLELOID FLOORINGS
REG. U.S. PAT. OFF.
TRADE-MARK

All Marbleloid products are installed by the Company's skilled mechanics, regularly employed. All installations are rigidly guaranteed against all defects in material or workmanship.

Definite proposals for complete installations, together with detailed specifications and samples, will be gladly furnished upon request.

Our Engineering Department will welcome an opportunity to have a technically trained representative consult with you regarding your flooring problems.

Marbleloid Water Repellent "Plastic Magnesia"
(Symbol PM)

(Now produced in new and hitherto unobtainable colors and color tones)

A standardized, permanent, fireproof, resilient plastic magnesia product for floors, coved sanitary base, wainscot, trim, stair treads, risers, etc. The ingredients have been selected and combined to produce a flooring which is pleasing in appearance, non-porous, non-slippery, low in thermal conductivity, durable, high in structural and crushing strength, light in weight and relatively inexpensive. Attractive colors can be furnished to fit into any desired color scheme. In Marbleloid, *all colors can be produced and in any tone, from a dark neutralized one to a brilliant spectral hue.* Samples of our newest colors are available to architects upon request.

The product bonds to wood, concrete or steel and is used in new or alteration work. It is installed in a plastic state and in two coats. The fibrous undercoat, with a minimum thickness of $\frac{5}{16}$ in., serves to take up inequalities in the foundation and also as a cushion for the harder, wear-resisting top coat, which is $\frac{3}{16}$ in. thick.

The flooring weighs approximately 3 lbs. per sq. ft.; its compressive strength is over 5,000 lbs. per sq. in.; its average tensile strength is 750 lbs. per sq. in.; it will withstand a heat of 1700° F. without cracking or disintegrating.

All Marbleloid Floorings are definitely water-resistant. This feature alone assures the architect of an improved magnesite flooring which, by repelling water, gives longer and more satisfactory service.

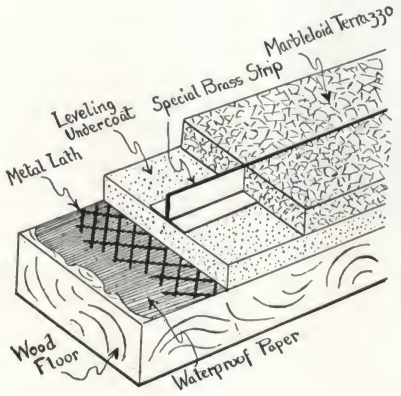
Marbleloid Water Repellent Heavy Duty Flooring
(Symbol HD)

(For Factories and Industrial Plants)

Marbleloid Heavy Duty Flooring is a harder flooring than "Plastic Magnesia," but should not be confused with the usual so-called "all mineral" type of magnesia flooring. Calcined magnesite is used but the other ingredients, not used in the "Plastic Magnesia" material, have been selected and combined to give a product that will withstand the severest industrial plant wear. This flooring is especially recommended for trucking aisles, runways and similar spaces subject to the traffic of heavy bodies. Like the "Plastic Magnesia" flooring, the heavy duty industrial flooring may be applied directly over the old worn flooring, whether of wood, concrete or steel. The usual thickness is from ¾ in. to 1 in. It is furnished in any color.

Marbleloid Water Repellent Terrazzo Flooring
(Symbol TZ)

(A light-weight, water-resistant terrazzo of highest quality)



Marbleloid Terrazzo is not a substitute for portland cement terrazzo flooring. It is a high grade terrazzo flooring, unique in its use and advantages. It may be *installed directly over a wood, cement* or other worn-out flooring in a thickness of only *⅝ in. to ¾ in.,* thus avoiding the necessity of removal of old flooring and preparation of a special foundation.

It is non-slip. Marbleloid Terrazzo is noted for its beauty, obtained by uniformly *clearer colors or tints* in the binding cement.

Marbleloid Terrazzo has an exceptionally high tensile strength, resulting from the magnesium oxy-chloride cementing material used. This high strength permits the use of a larger proportion of marble aggregate and a finished surface is obtained 85% of which is made up of imbedded marble chips. Cracking, excessive contraction or expansion, pitting, disintegrating, chipping (especially at the dividing strips) are all provided against by carefully balanced formulae.

Marbleloid Terrazzo *weighs only 6 lbs. per sq. ft.* It may be installed at night and walked on the following morning. It is installed in two coats. The undercoat, serving as a cushion and leveling off the foundation on which it is laid, may be installed in a thickness of as little as ¼ in. The finish terrazzo coat, installed in a thickness of ⅜ in., is most attractively set off by the use of our patented *double angle* brass dividing strip. This strip is especially designed to compensate for structural movement. The material is an effective fire-stop.

Marbleloid Water Repellent Travertine Terrazzo (Patented March 29, 1927) (Symbol TT)

This product is an adaptation of Marbleloid Terrazzo. Imported travertine marble chips are used and, by a patented process, dark colored veinings are formed in the material to obtain a replica of the travertine block. The effect of individual slabs of travertine is obtained by blocking off the floor with brass strips. The bonding magnesia cement is colored to match that of the travertine chips used.

The following table shows the particular type of Marbleloid Flooring and coved base recommended for buildings and spaces listed. Symbols indicate types of flooring.

	Floor	Base		Floor	Base		Floor	Base
BANKS { Public Spaces	TZ	TZ	HOMES { Foyers	TZ	TZ or PM	RESTAURANTS { Dining Rooms	TZ or PM	TZ or PM
BANKS { Work Spaces	PM	PM	HOMES { Service Portions	PM	PM	RESTAURANTS { Kitchen	PM	PM
CHURCHES { Sanctuary and Aisles	TZ	.....	HOSPITALS { Corridors	TZ	TZ or PM	SCHOOLS { Corridors	TZ	TZ or PM
CHURCHES { Pew Spaces	PM	.....	HOSPITALS { Wards	PM	PM	SCHOOLS { Classrooms	PM	PM
DEPARTMENT STORES { Through-out	TZ or TT	.....	OFFICE BUILDINGS	TZ or PM	PM	SALES ROOMS	TZ or PM	TZ or PM
			PUBLIC BUILDINGS	TZ	TZ or PM	INDUSTRIAL PLANTS	HD	PM

SELBY, BATTERSBY & CO.

Manufacturers of and Contractors for Flooring

PHILADELPHIA, PA.

FLOOR CRAFTERS

Products

SELBALITH, a Plastic Magnesia Flooring.
LEVELITE, a Plastic Floor Leveler.
SELBAKOTE, a Factory Floor also a floor-leveler.
SELBATEX, a Mastic Floor.
SELBATRAZ, a Thin, Light-weight Terrazzo.

The Company—Experienced Floor Crafters

For nearly 25 years, this Company has continuously and successfully made and laid floors in buildings and on the majority of ships built in the United States. Significant is the fact that these products have withstood the severe stresses and vibrations of the steel deck plates of ships in heavy weather during all these years, because this proves the ability of these flooring materials to withstand the milder stresses in a building.

PLASTIC MAGNESIA FLOORS

Selbalith—When worn floors are to be renewed, Selbalith serves as a leveling material as well as a finished flooring, thereby saving expense. When a seamless and sanitary flooring is required in new buildings, Selbalith gives an enduring attractive surface that is easily cleaned and maintained.

"S. S. Santa Rosa"—One of the Four New Grace Liners
Selbalith Flooring in all interior spaces on hundreds of ships—proof that it is crackproof and fireproof

Though usually laid in one color, Selbalith is often laid as multi-colored tile with joints in contrasting colors. Applied with a trowel over wood, concrete, steel or gypsum to any thickness from ½-in. upward. Appropriate in stores, apartments, churches, restaurants, schools, etc.

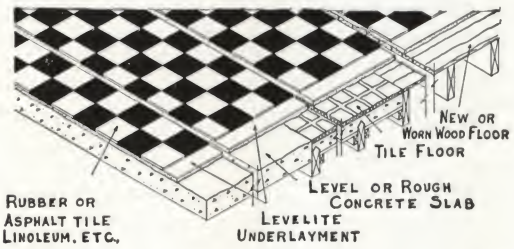
INDUSTRIAL FLOORS

Heavy Duty Selbalith—In all industrial buildings, where a dustless floor is necessary under trucking traffic (except where moisture prevails) *Heavy* Duty Selbalith is the appropriate floor. Laid with a trowel to ⅝ in. or greater thickness over wood or concrete. Composed of harder aggregates than Standard Selbalith, it resists all ordinary stresses and is immune to oil and grease.

Selbakote—Where moisture prevails or even in spaces exposed to the weather (but not where oil and grease are prevalent) Heavy Duty Selbakote is an extremely tough and durable flooring for industrial purposes. Laid with a trowel over wood or concrete, even to a featheredge. Formulas vary with requirements.

UNDERLAYMENTS

The beauty of many finished floors is spoiled by unevenness due to irregular sub-floors. On renovation jobs, underlayments like Levelite or Selbakote Smoother assure a smooth finished floor, cost little and are therefore a good investment. On new



buildings, instead of having the concrete contractor install the cement topping, many architects specify that the slab shall be floated level and even, but not steel troweled, the surface be ⅜ to ½ in. below finished floor line, that the resilient flooring contractor apply Levelite or Selbakote Smoother ¼ in. thick (in place of cement topping) to a smooth even finish before laying resilient flooring, such as linoleum, rubber or asphalt tile. This puts the entire responsibility for a smoothly finished job on the resilient floor contractor and costs little, if any, more than an uneven job with divided responsibility.

Levelite—Originated as an extremely lightweight leveling coat for lapped steel deck plates of ships, Levelite has found wide use as a leveler of uneven floors of any type wherever carpet, linoleum, rubber, asphalt tile or similar floors are to be laid. A Levelite floor consists of three materials, namely: Levelite Bonder applied to the sub-floor to effect a secure bond; Levelite Compo in powder form; and Levelite Emulsion in paste form. The Compo and Emulsion are mixed together and troweled on the uneven floor to a thickness of from ⅛ in. upwards. It may be laid to a featheredge. Levelite will take and hold tacks nails and screws; may be bored or sawed with carpenter's tools without chipping or breaking. Weight less than 5 lbs. per sq. ft. 1 in. thick. Levelite contains considerable cork and is therefore an excellent insulator and sound deadener. Levelite is verminproof, non-cracking, non-bulging, non-inflammable. In renewing worn wooden stair treads or filling in steel treads, Levelite is particularly effective. Levelite will bond to cement, concrete, steel, terrazzo, ceramic or quarry tile, or to marble without any mechanical bonder. The Levelite Bonder suffices. Over wood floors it is sometimes necessary to nail down poultry wire first, merely as a reinforceing, because of possible "working" of the boards.

Selbakote—Heavier than Levelite, not quite so resilient, but just as durable, and a little less expensive. Selbakote is especially appropriate as an underlayment, particularly where dampness exists or even where exposed to the weather.

TYPICAL INSTALLATIONS

Shrine Hospital, Philadelphia, Pa.
Sears Roebuck & Co., Roosevelt Boulevard, Philadelphia, Pa.
Viscose Company, Lewistown, Pa., and Marcus Hook, Pa.
National Oil Products Co., Harrison, N. J.
E. I. duPont & Co., Gibbstown, N. J.
Philadelphia Storage Battery Co., C and Ontario Streets, Philadelphia, Pa.
Bayuk Cigars, Inc., Lancaster, Pa.
Standard Oil Company of New Jersey

THE DURAFLEX CORPORATION

MANUFACTURERS OF

Duraflex Asphalt or Mastic Tile (Mastic or Composition Tile)
Duraflex-A Mastic Flooring
Duraflex Industrial Asphalt Mastic Flooring

MAIN PLANT AND OFFICE

BALTIMORE, MD.

NATIONAL DISTRIBUTION

Duraflex Asphalt Floors—in service 18 years and more—have long since proven the value of this product and the principles of quality behind it.

The road to "economy" leads straight to "quality."

There is nothing *cheaper* that can be substituted for "quality."

The extra percentage you pay for "quality standards" over what you pay anyhow, is the cheapest ingredient you buy into your material.

DURAFLEX ASPHALT TILE

For Schools, Office Buildings, Hospitals, Institutions, Stores, Rooms, Corridors, Laboratories, Recreation Rooms, Basement Floors, etc.

Duraflex Asphalt Tile is made of asphalt and carefully prepared thermo-plastic gums, combined with asbestos fibre, selected fine fillers, and the very best of color pigments, compressed under heavy pressure to tile form.

Thickness—⅛, $\frac{3}{16}$ and ¼ in.

Sizes—Standard: 9x9, 9x18, 12x12 and 12x24 in. Special sizes and special designs.

Colors—Tan, brown, red, green, gray, blue and black. Various shades and patterns of marbelized effects. Can be produced to closely match any similar color.

It is a quiet, resilient, warm floor that is non-slippery, even when wet, is waterproof, non-absorbent and highly sanitary. It is highly resistant to fire, acids, alkalies and electricity. When replacements become necessary through damage or wear (by excessive use of a small area), or alterations, they can easily be made by installing new tile only in the area affected, without changing the appearance of the floor or showing signs of the repairs made.

Typical Duraflex Tile Flooring

Specifications for Duraflex Asphalt Tile Flooring—(Note to the Architect: Use above description, stating thickness, size and color desired.)

The grounds or subfloor on which Duraflex Tile is to be laid shall be as follows:

General—All surfaces to serve as grounds on which Duraflex Tile are to be laid shall be furnished in place by others, structurally sound and solid, broom clean, and free from scale, rust, chalky or laitance deposits, grease, paints or other foreign substances. The level or pitch required must be obtained in the subfloor. A rigid stop of metal, or other material, must be provided where the Duraflex Tile floor ends at landings, balconies, doorways, etc. The top of the stop must be at the grade of the finished floor, and the stop must be of the thickness of the tile specified.

Cement Subfloor—Where laid over a cement floor, the cement finish shall be hard troweled to a true, smooth and even surface a distance below the finished floor equal to the thickness of the tile to be used.

Wood Subfloor—Wood subfloors shall be thoroughly seasoned and dry to insure against warping, with all boards securely nailed, rigid, closely spaced and without movement between the boards. (½-in. Magnesite Undercoat, asphalt mastic undercoat, or 15-lb. felt, to be laid by the tile contractor on the wood under the tile according to the architect's requirements, which must be stated in the specifications to be installed according to the tile manufacturer's approved specification).

Base—Where cove base is called for, install Duraflex Flexible Cove Base of standard base colors, 6 in. high and having floor lip to correspond with thickness of tile. As a backing for the base, the wall plaster is to be carried down to the floor, or other suitable rigid grounds provided. The base is to be cemented to the wall with cement recommended by the manufacturers. *(Any of the regular base materials can be used with Duraflex Asphalt Tile, including cement, wood, asphalt tile, rubber, metal, etc., provided an edge or shoulder the thickness of the tile is given on the floor where the two materials abut.)*

Guarantee—The Duraflex Corporation shall guarantee the tile to be free from all defects in material and workmanship, and for one year from date of completion of the work, shall furnish without charge, any tile needed to replace any such defective material, provided payments have been made for the work as agreed, and notice of such defectiveness is given to them in writing.

The contractor installing the tile shall guarantee first class workmanship and materials, and that the standard specifications and conditions of The Duraflex Corporation for proper installation and use of the material, have been followed and that all work of installation necessary to repair any defects shall be done by him promptly, without cost to the owner, and completed within thirty days after receipt of notice.

Neither the tile manufacturer nor the installing contractor will be held responsible for defects caused by defective backing or underfloors, or to improper work or materials of other parties, nor for any unevenness or unlevelness in the finished floor, which is due to unevenness or unlevelness of the underfloor not furnished by them.

DURAFLEX-A FLOORING

For Schools, Office Buildings, Hospitals, Gymnasiums, Laboratories, etc.

Duraflex-A Flooring is made of a ductile mineral rubber or asphalt, is applied cold in plastic form, and produces a flooring resembling linoleum. It can be applied over new or old cement, composition, wood or steel floors, and stair treads, except heavy duty factory or shop floors, and those subject to the action of oils and greases.

Duraflex-A forms a continuous seamless finished flooring that bonds solidly and practically integrally with the subfloor.

Made in solid colors: Olive green, tan, brick red and black.

Typical Duraflex Mastic Flooring

Duraflex-A floors can be maintained in perfect condition, equal to new, at all times because the surface is renewable in whole or in part by simply recovering worn or damaged parts with additional plastic material. The new part forms a hermetic seal with the old, or bonds solidly to the subfloor if worn through. For this reason, Duraflex-A is a permanent floor surface of the building and should be so considered.

Descriptive folder giving full details and specifications for installation will be furnished.

DURAFLEX INDUSTRIAL ASPHALT MASTIC FLOORS

For Plants, Factories, Aisles, Platforms, Resurfacing, Leveling and Repairing Old Floors, and As a Filler or Subfloor Under Other Materials

This material is applied in a plastic condition, spread with a trowel, usually about ½-in. thick (but can be spread from feather edge to several inches thick) and forms a long wearing asphaltic surface similar to cement but more ductile, more resilient, easier under foot, and of long ultimate life.

Descriptive folder giving full details and specifications for installation will be furnished on request.

JOHNS-MANVILLE

EXECUTIVE OFFICES
22 E. 40th Street
NEW YORK, N. Y.

Products

JOHNS-MANVILLE ASPHALT TILE FLOORING.

For the following Johns-Manville products, see File Index: Insulating Board; Acoustical and Sound Isolation Materials; Transite, Flat and Corrugated; Home Insulation; Built-up and Insulated Roofs; Asbestos and Asphalt Shingles; Pipe Covering and Insulation; Asbestos Flexboard and Asbestos Wainscoting; Steeltex for Plaster, Stucco and Brick Veneer; Steeltex Floor Lath; Welded Wire Reinforcement; Transite Walls for office partitions; Flush Doors.

J-M TYPE A AND HEAVY DUTY ASPHALT TILE FLOORING

Johns-Manville Type A Asphalt Tile Flooring, composed of rectangular units of various sizes and colors, provides a resilient, quiet, decorative, long-wearing floor, applicable over practically any smooth and firm underfloor, and particularly adapted to service in every type of commercial or public building.

With the great variety of plain and marbleized colors and innumerable patterns possible, any desired effect is easily obtained — bright and cheerful, dark and rich, gay or unobtrusive. The harmony of the extensive line of colors permits them to be used together with the utmost freedom in any pattern or combination selected, with the assurance that the resulting effect will be pleasing to the eye and perfectly suitable, whatever the scheme of interior decoration or location.

Since the mottling of no two units in the same color combination is exactly alike, a floor laid with J-M Marbleized Asphalt Tile shows a freedom from repetition which is usually lacking in marbleized designs. Borders and feature strips are also available to make possible an almost limitless number of distinctive flooring designs.

The first cost of J-M Asphalt Tile compares favorably with other resilient floor coverings of the same thickness, while their toughness, resistance to abrasion and maintained durability under the hardest usage has been proved in thousands of installations over many years of service.

DESIGN NO. 15
FIELD OF NO. 123 - 6X12; NO. 103 - 3X6; NO. 24 - 3X3; NO. 22 - 6X6. FEATURE STRIP OF NO. 24 - 3X24. BORDER OF NO. 1.

J-M Asphalt Tile Flooring, when laid, is fire-retardant and has been officially approved for use in fireproof buildings in many large cities throughout the country, notably New York where the fire laws are stringent.

The resiliency of J-M Asphalt Tile makes for quiet foot traffic. It is also a safe floor, because the surface does not wear slippery. It is odorless, non-absorbent and will not originate dust. This, with its ease of cleaning, make it particularly adapted to locations where high sanitary standards must be maintained, such as in hospitals, schools and sanitariums. The units do not buckle, curl or oxidize on contact with water and proper cleaning agent. Barring exceptional abuse, J-M Asphalt Tile require no attention or expense for maintenance beyond ordinary cleaning.

When excessive abuse or severe accident makes a repair necessary, new units can be easily inserted to replace the old. Moreover, the pattern can be readily extended as partition removals or office changes require.

DESIGN NO. 18
FIELD OF NO. 103 - 6 X 6; NO. 123 - 3 X 6 AND 3 X 3; NO. 119 - 3 X 3. FEATURE STRIP OF NO. 123 - 1½ X 24 BORDER OF NO. 2.

DESIGN NO. 8
FIELD OF NO. 121 - 6 X 6; NO. 120 - 3 X 6; NO. 111 - 3 X 3. FEATURE STRIP OF NO. 120 - 3 X 24. BORDER OF NO. 111.

DESIGN NO. 7
FIELD OF NO. 12 - 6 X 6; NO. 124 - 3 X 6 AND 3 X 3; NO. 123 - 3 X 3. BORDER OF NO. 124.

DESIGN NO. 13
FIELD OF NO. 103 - 6 X 6; NO. 119 - 6 X 6; NO. 121 - 6 X 6; NO. 123 - 6 X 6. FEATURE STRIP OF NO. 12 - 1½ X 24. BORDER OF NO. 1.

J-M Type A Asphalt Tile

Type A Asphalt Tile are manufactured in the following sizes and colors:

⅛ in. and 3⁄16 in. thick			*¼ in. thick*
3 x 3 in.	6 x 12 in.	12 x 12 in.	9 x 9 in.
3 x 6 in.	9 x 9 in.	12 x 24 in.	9 x 12 in.
6 x 6 in.	9 x 18 in.	18 x 24 in.	12 x 12 in.
			12 x 24 in.

Plain Colors	*Marbleized Colors*
No. 1 Black	No. 101 White on Ivy Green
No. 2 Mahogany	No. 102 White on Black
No. 3 Red	No. 103 White, Yellow on Rose
No. 4 Brown	No. 104 Terra Cotta, Yellow on Mahogany
No. 5 Olive Green	No. 106 Black, White, Green on Gray
No. 11 Tan	No. 107 White on Green
No. 12 Terra Cotta	No. 108 Buff on Mahogany
No. 13 Ivy Green	No. 111 Black, White on Gray
No. 14 French Gray	No. 112 White, Green on Black
No. 21 Buff	No. 115 Ivy Green, White on Green
No. 22 Rose Taupe	No. 116 Dark Brown, Orange Gold on Cream
No. 23 Emerald	
No. 24 Pearl Gray	No. 118 Red, Gold on Black
No. 31 Dark Blue	No. 119 White, Gold on Red
No. 32 Light Blue	No. 120 White, Green on Olive Green
	No. 121 White, Gold on Terra Cotta
	No. 122 White on Brown
	No. 123 Brown, White on Beige
	No. 124 White, Blue on Dark Blue
	No. 125 White, Blue on Light Blue

Weight per square foot: ¼-in. thick—2.5 lbs.; 3⁄16-in. thick—1.8 lbs.; ⅛-in. thick—1.2 lbs.

J-M Flexible Composition Base is furnished in black, brown and mahogany only, 6x36 in., ⅛-in. thick, with floor lip either ⅛, 3⁄16 or ¼ in. thick, for use with Type A Asphalt Tile. Other materials ordinarily used to form a base may also be used with J-M Asphalt Tile Flooring.

J-M Heavy Duty Asphalt Tile

J-M Heavy Duty Asphalt Tile will give more satisfactory service than other resilient floor surfacings where exposed to exceptionally heavy traffic, too severe for ordinary types of resilient flooring.

Heavy Duty Asphalt Tile have an additional advantage, from a construction standpoint, in that they can be applied directly to smooth wood sub-floors without the leveling course usually necessary.

Furnished in ¼-in. thickness only, in the following colors:

Plain Colors	*Marbleized Colors*
Black	No. 203 Gray on Black
Red	No. 204 Green on Black
Mahogany	

Standard sizes: 9x9, 9x18, 12x12 and 12x24 in.

Weight per square foot, approximately 2.5 lbs.

Approved Flooring Contractors

As a satisfactory job results only when good materials are correctly laid, Johns-Manville has appointed Approved Flooring Contractors throughout the country, basing these appointments on thoroughness of workmanship and financial responsibility.

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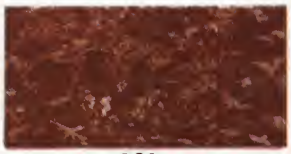
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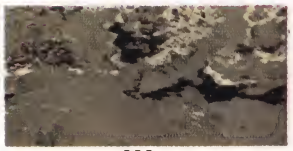
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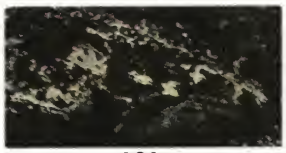
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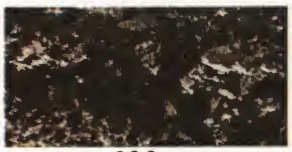
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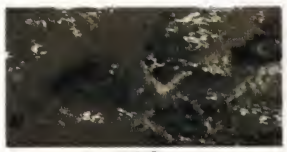
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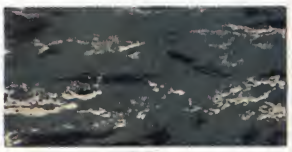
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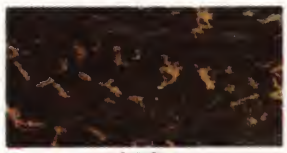
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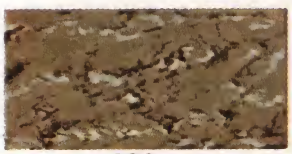
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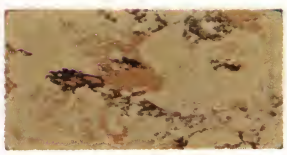
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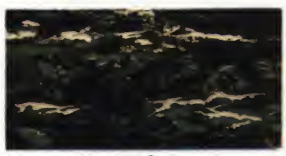
Color Chart

JOHNS-MANVILLE TYPE A ASPHALT TILE

For identification, see the corresponding numbers in the list on the opposite page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Pure Oil Building, Chicago, Ill.

Mary Harkness Hall, Connecticut Women's College, New London, Conn.

Brookings Institute, Washington, D. C.

A FEW REPRESENTATIVE INSTALLATIONS OF JOHNS-MANVILLE ASPHALT TILE FLOORING

Colleges

Ursuline College
Santa Rosa, Calif.
University of California
Berkeley, Calif.
Youngstown College
Youngstown, Ohio
Georgetown University
Georgetown, Md.
Catholic University, Washington, D. C.
Connecticut Women's College
New London, Conn.
Wells College
Aurora, N. Y.
Middlebury College
Middlebury, Vt.
Mills College
Oakland, Calif.

Schools

Berkeley County High School
Berkeley, Calif.
George Washington High School
San Francisco, Calif.
Wampum School
Wampum, Pa.
Cedar Grove School
Shreveport, La.
West End High School
San Antonio, Texas
William Wilson School
Mount Vernon, N. Y.
District 3 Grammar School
Rye, N. Y.
Quaker Ridge School, New Rochelle, N. Y.
Low Heywood School
Shippan Point, Stamford, Conn.
Englishtown School
Englishtown, N. J.
Haworth School
Haworth, N. J.
Melrose High School
Melrose, Mass.
Forest Park Junior High School
Fort Worth, Texas
Jenning Ave. Junior High School
Fort Worth, Texas
St. James School
Hagerstown, Md.

Hospitals

St. Elizabeth Hospital
Youngstown, Ohio
Eye, Ear, Nose and Throat Hospital
Pittsburgh, Pa.
New Martinsville Hospital
New Martinsville, W. Va.
Ohio Valley Hospital
Wheeling, W. Va.
Bellaire Hospital
Bellaire, Ohio
Eitel Hospital
Minneapolis, Minn.
Abbott Hospital
Minneapolis, Minn.
Naeve Hospital
Albert Lea, Minn.
Highland Clinic
Shreveport, La.
City Memorial Hospital
Nacogdoches, Tex.
Maryland Tuberculosis Sanitarium
Sanitarium, Md.
Highland Sanitarium
Shreveport, La.
Tripler Hospital
Hawaiian Islands
Flint-Goodrich Hospital
New Orleans, La.
Middlesex Hospital
New Brunswick, N. J.
New York Hospital
New York, N. Y.
Mount Sinai Hospital
New York, N. Y.
St. James Riverside Hospital
Yonkers, N. Y.
Physicians' Hospital
Jackson Heights, L. I., N. Y.
New Jersey State Hospital
Marlboro, N. J.
Washington County Hospital
Hagerstown, Md.
Freedmans Hospital
Washington, D. C.
Bolling Field Hospital
Washington, D. C.
Jordan Hospital
Highland Park, Mich.
U. S. Veterans Hospital
Jefferson Barracks, Mo.
Veterans Hospital
American Lake, Wash.
Children's Hospital Bldg., State Tuberculosis Hospital, Sanitarium, Tex.

Acacia Mutual Life Insurance Company, Washington, D. C.

A FEW REPRESENTATIVE INSTALLATIONS OF JOHNS-MANVILLE ASPHALT TILE FLOORING

Churches

Hennepin Ave. M. E. Church
Minneapolis, Minn.
St. Anthony Church
Brown's Valley, Minn.
St. Johns's Lutheran Church
Good Thunder, Minn.
Holy Rosary Church
Houston, Tex.
Church of the Immaculate Conception
Houston, Tex.
St. Paul's Methodist Church
Houston, Tex.
Keller Memorial Church
Washington, D. C.
Overlea Baptist Church
Overlea, Md.
Church of the Latter Day Saints
Berkeley, Calif.
Christ Church, Methodist Episcopal
60th St. and Park Ave., New York
First Church in Malden
Malden, Mass.
Ruggles St. Baptist Church
Boston, Mass.

Banks

Bank of America
San Francisco, Calif.
Monterey County Bank
Greenfield, Calif.
National City Realty Co.,
Compound Interest Dept.
New York, N. Y.
First National Bank
Shreveport, La.

Office Buildings

Tilden Sales Bldg.
San Francisco, Calif.
Financial Centre Bldg.
San Francisco, Calif.
Balfour Bldg.
San Francisco, Calif.
California Commercial Union Bldg.
San Francisco, Calif.
Metropolitan Bank Bldg.
Minneapolis, Minn.
Federal Reserve Bank Bldg.
Minneapolis, Minn.
La Salle Bldg.
Minneapolis, Minn.
First National Soo Line Bldg.
Minneapolis, Minn.
Guardian Life Bldg.
St. Paul, Minn.
Pere Marquette Bldg.
New Orleans, La.
Atlas Bldg.
Shreveport, La.
Union Planters Bank Bldg.
Memphis, Tenn.
Gulf, Colorado & Santa Fe Bldg.
Galveston, Tex.
Acacia Mutual Life Ins. Bldg.
Washington, D. C.
Fruit Growers Express Bldg.
Washington, D. C.
Stanislaus County Fire Ins. Bldg.
Modesto, Calif.
Public Service Bldg.
Paterson, N. J.
G. W. Paterson Bldg.
Fresno, Calif.
McGraw-Hill Bldg.
New York, N. Y.
Herald-Traveler Bldg.
Boston, Mass.
Fox Film Bldg.
Memphis, Tenn.
Glasser Bldg.
Paterson, N. J.
State Board of Health Bldg.
(Division of Sanitation)
St. Paul, Minn.

Miscellaneous

Academy of Science
San Francisco, Calif.
State Capitol
St. Paul, Minn.
Dallas Public Library
Dallas, Tex.
WBA Radio Station
Annapolis, Md.
Lualualei Radio Station
Oahu, Hawaiian Islands
Embassy Hotel
San Francisco, Calif.
Chevy Chase Country Club
Washington, D. C.
Public Library
San Francisco, Calif.
City Hall
Seguin, Tex.
Brookings Institute
Washington, D. C.

First Church, Malden, Mass.

Melrose High School, Melrose, Mass.

New York Hospital, New York, N. Y.

MacMillan Hall, Wells College, Aurora, N. Y.

SPECIFICATIONS FOR J-M ASPHALT TILE FLOORING

Work Included—The work contemplated under this specification shall include all material, labor, equipment and services necessary for the installation of Johns-Manville Asphalt Tile Flooring as shown on the drawings or herein specified. (*State in detail work to be done, including colors, patterns, sizes and thickness of asphalt tile to be used in individual rooms.*)

If a cove base is shown on plans or called for in the schedule, it shall be Johns-Manville 6″ high Flexible Composition Base having a floor lip the thickness of the asphalt tile specified.

Work Not Included—The following work is included under other divisions of the specifications, which this contractor shall read to ascertain what is called for therein.

A. (*Include if sub-floor is to be new concrete.*)

The concrete sub-floor shall be firm and solid and shall have a top finish of at least ¾″ to 1″ thick. This finish shall be composed of one part portland cement and two parts clean screened sand. This topping shall be brought to a smooth, steel-troweled, monolithic finish free from waves and irregularities and finished to a point below the required floor level equal to the thickness of the asphalt tile flooring specified.

B. (*Include if sub-floor is to be old concrete.*)

The concrete sub-floor shall be prepared by the flooring contractor in accordance with manufacturer's application directions.

C. (*Include if sub-floor is to be new wood.*)

New wood sub-floors shall be of double construction, over joists not to exceed 16″ centers and which are of sufficient structural strength to carry intended loads without deflecting. The surface flooring shall be of well-seasoned, kiln dried, T & G flooring, not over 3″-face width, top-nailed and toe-nailed to a tight surface. All wood floors shall be sanded to a uniform smooth surface, shall contain no cupped or springing boards and shall be left in a suitable condition to receive Johns-Manville Asphalt Tile, in accordance with manufacturer's directions.

D. (*Include if sub-floor is to be old or uneven wood.*)

Old wood sub-floors shall be of double construction over joists not to exceed 16″ centers and which are of sufficient structural strength to carry intended loads without deflecting. These sub-floors shall be prepared by the flooring contractor in strict accord with the manufacturer's application directions.

E. (*Include if J-M Flexible Composition Base is to be used.*)

A smooth backing of cement, wood, plaster or other suitable material shall be provided to the height of the base specified.

Connecting Work—The J-M Approved Asphalt Tile Flooring Contractor shall examine all surfaces on which his work is to be applied and he shall notify the architect in writing of any defects that he may discover which, in his opinion, he considers detrimental to the installation of his materials.

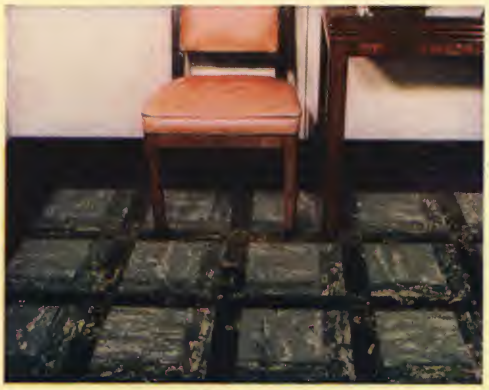
Materials—All asphalt tile flooring, asphalt tile cement (and, where specified, Flexible Composition Base) referred to in these specifications shall be Johns-Manville and shall bear the manufacturer's label. The thickness of the asphalt tile, size, colors, etc., shall be as specified and shall be installed by an approved Johns-Manville Asphalt Tile Flooring Contractor.

Samples—The contractor shall submit for approval with his bid duplicate samples of each color of J-M Asphalt Tile required under his contract. Samples shall be labeled with the manufacturer's name, flooring contractor's name, and the name and color number of the tile.

Installation—After the completion of work by the trades, such as plasterers, painters and carpenters, J-M Asphalt Tile shall be applied in strict accordance with the manufacturer's application directions. Temperature of the rooms and sub-floors shall be maintained at a minimum of 70 deg. F. for several days before, during and after the application of J-M Asphalt Tile. The completed floor, when protection is necessary, shall be covered with building paper.

Cleaning—J-M Asphalt Tile Flooring shall be thoroughly cleaned (using a neutral soap or cleaner approved by the manufacturer) when directed by the architect, after installation and after the asphalt tile has thoroughly bonded to the sub-floor.

DESIGN NO. 1
FIELD OF NO. 107 - 6 X 6, 3 X 6 AND 3 X 3; NO. 123 - 3 X 3. BORDER OF NO. 123.



DESIGN NO. 9
FIELD OF NO. 115 - 6 X 6; NO. 107 - 3 X 6 AND 3 X 3; NO. 101 - 3 X 6 AND 3 X 3. BORDER OF NO. 1.

DESIGN NO. 4
FIELD OF NO. 24 - 6 X 12; NO. 32 - 6 X 6; NO. 31 - 3 X 6; NO. 1 - 3 X 3. BORDER OF NO. 1.

DESIGN NO. 11
FIELD OF NO. 31 - 12 X 12; NO. 32 - 3 X 3; NO. 24 - 3 X 6. FEATURE STRIP OF NO. 24 - 3 X 24. BORDER OF NO. 22.

HACHMEISTER-INC.

Manufacturers and Contractors for Floors of Mastic, Magnesite and Rubber

FACTORY AND GENERAL OFFICES
2332-2338 Forbes Street, PITTSBURGH, PA.
REGISTERED CABLE ADDRESS: "HAKO" PITTSBURGH

REPRESENTATIVES IN PRINCIPAL CITIES

Types of Hako Floors

HAKO MASTIC TILE.
HAKO MAGNESITE COMPOSITION.
HAKO MAGNESITE TERRAZZO.
HAKO HOT and COLD MASTIC.
HAKO HOT ASPHALT.
HAKO EMULISIFIED ASPHALT.
HAKO RUBBER TILE.

Hachmeister Organization and Service

Hachmeister's highly trained corp of Flooring Engineers are always at your service for consultation. Their long years of experience qualify them to offer expert advice on flooring problems.

Millions of feet of Hako Floors of all types have been installed during our many years of service to the Architectural Profession, and we can point with pride to these installations—in prominent buildings in important cities—as examples of beauty, durability and economy.

Here Are Just a Few of the Many Outstanding Hako Floor Installations

Internal Revenue Building, Washington, D. C.
Hall of Science, Century of Progress, Chicago, Ill.
Gulf Refining Co., Research Laboratory, Harmarville, Pa.
Bell Telephone Company Building, Cincinnati, Ohio
Boggs & Buhl Department Store, Pittsburgh, Pa.
Allegheny County Home and Hospital, Woodville, Pa.
Ohio State University, Columbus, Ohio
Cornell University, Ithaca, N. Y.
Syracuse University, Syracuse, N. Y.
University of Buffalo, Buffalo, N. Y.
Koppers Stores, Incorporated, Pittsburgh, Pa.
Cresson State Sanitarium, Cresson, Pa.
First Presbyterian Church, Johnstown, Pa.
First Baptist Church, Washington, Pa.
Monroe County Home, Rochester, N. Y.
Allegheny County Jail, Pittsburgh, Pa.
Mehary Medical College, Nashville, Tenn.
Jones & Laughlin Steel Co.
Firth-Sterling Steel Co.
Kroger Grocery & Baking Co. Stores
G. C. Murphy Co. Stores
Meadow Gold Dairies, Inc.
Pennsylvania State Highway Garages

Hako Flooring Materials and Installations Are Guaranteed

All Hako Flooring materials when used in strict compliance with directions and when laid over approved surfaces are fully guaranteed by HACHMEISTER-INC.

Convenience of Hako Installations

A vast number of Hako commercial installations are made without interference to the client's regular business and always at the convenience of the client.

Attributes of Hako Mastic Tile Floors

A large variety of colors are offered—plain or marbleized. Installed in an almost endless combination of designs. Beautiful, durable, economical. Resilient, quiet under foot, and sanitary. Acid, alkali and water resisting. Made in all standard sizes and in three thicknesses ⅛, $\frac{3}{16}$ and ¼ in. They will not sustain combustion. Laid over approved cement or wood sub-floors.

Hako Magnesite Composition Floors

This attractive and economical floor is installed in plastic form to a thickness of ½ in., over approved wood or concrete sub-floors. It forms a sanitary, quiet and durable floor. Fireproof. Comfortable under foot. Laid in attractive color combinations and with sanitary coved base if desired. Can be put in service twenty-four hours after installation.

Hako Magnesite Terrazzo Floors

Because of magnesite being employed instead of ordinary cement as a binding medium it is now practical to lay Hako Terrazzo lighter and thinner than is possible with portland cement. Our terrazzo is laid in ½-in. thickness on a ¼-in. prepared base of metal lath embedded in magnesia cement. Any desired separation of color is possible and the most intricate design may be reproduced after having been outlined with sturdy dividing strips of brass.

Hako Rubber Flooring

An assortment of beautiful colors are available in either plain or marbleized effects. Laid with a special waterproof cement over prepared and approved sub-floors.

Specifications, Quotations and Samples

Specifications and samples will be sent promptly to architects requesting same or direct to the client if desired. Quotations cheerfully and promptly furnished.

A Hako Marbleized Mastic Tile Floor Recently Installed in This Modern and Beautifully Streamlined Jewelry Store

ESTABLISHED 1899

DAVID E. KENNEDY, INC.

Kennedy Resilient Tile Floors

FACTORY AND EXECUTIVE OFFICES

58 Second Avenue, BROOKLYN, N. Y.

SALES OFFICES:

CHICAGO, ILL.—30 No. Michigan Avenue
NEW HAVEN, CONN.—P. O. Box 927
ATLANTA, GA.—Bona Allen Bldg., 133 Luckie Street
LOS ANGELES, CALIF.—808 So. Vermont Avenue

RESPONSIBLE FLOORING CONTRACTORS IN PRINCIPAL CITIES

For Kencoustic (Cork Acoustical Tile), see File Index

Kennedy Products

KENTILE ASPHALT TILE (for floors and walls); Greaseproof KENTILE.
FLEX-O-BASE (Flexible asphalt cove base)
HOOD RUBBER TILE (Floor and wall covering)
KENCORK (Cork flooring with square and bevelled edges for floors and walls)
KENCOR CORK BULLETIN BOARDS
X-ITE (for floors and walls)
Also Kencoustic Cork Acoustical Tile; and Cork Insulation.

At Right:

Administration Building, New York World's Fair
70,000 sq. ft. Kentile installed

Kentile Installed in a School Cafeteria

Kentile Installed in a Modern Office

KENTILE
The Modern Asphalt Tile Flooring

Specifications for Kentile (Asphalt Tile)

All finished floors in (enumerate spaces) shall be of KENTILE, manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., and installed by its approved flooring contractor. Thickness shall be 3/16" (also available in ⅛" and ¼" thickness). KENTILE shall be composed entirely of inert materials, with necessary blending agents. The major ingredients shall be asphalt of high melting point, clean asbestos fibre, inert filler and pure mineral pigments. All tile shall have a calendered surface; contain no sand, grit, or vegetable rubber; to be equal in all respects to samples held by the architect, with the same factors of ductility, hardness, non-absorbence, resistance to acids, alkalies and water; shall be free from lumps and unmixed coloring matter.

The designs shall be as follows: (It is well to mention the size of tile and KENTILE colors, for the price varies according to the color and size of tile selected. Standard sizes are 9 x 9", 12 x 12", 6 x 12", 9 x 18", 12 x 24". Samples for color selection will be furnished on request.)

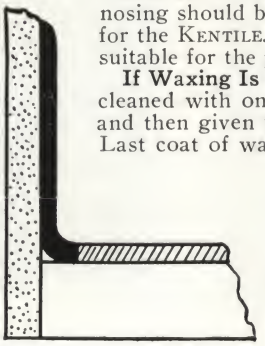
KENTILE shall be fastened to concrete backing throughout the entire surface with adhesive as recommended by the manufacturer. Where installed upon a wood backing, a layer of 15 lb. saturated felt paper with butt joints shall be cemented over the entire wood floor with linoleum paste. KENTILE shall be cemented over this felt paper with an adhesive as recommended by the manufacturer.

(Where grease or oils come in contact with the floor, such as in restaurants, kitchens, bakeries, service stations, etc., specify Greaseproof KENTILE.)

If a Cove Base Is Desired, Add—FLEX-O-BASE 6" high (also available in 4" height) shall be furnished and set around walls of all rooms having KENTILE floors.

If Straight Base Is Desired, Add—KENTILE Straight Base 6" high (also available in 4" height) shall be furnished and set around walls of all rooms having KENTILE floors.

Stair Treads—If KENTILE is to be used on stair treads and/or risers and the treads are not recessed for the reception of KENTILE flooring, a metal nosing should be specified for the front edge of the tread as a protection for the KENTILE. We will be glad to furnish the name and type of nosing suitable for the particular purpose upon request.



If Waxing Is Desired, Add—After KENTILE flooring is installed it shall be cleaned with one coat of cleaner as recommended by the manufacturer and then given two coats of wax as recommended by the manufacturer. Last coat of wax to be buffed.

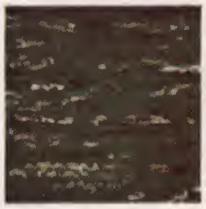
FLEX-O-BASE

FLEX-O-BASE is the outstanding sanitary cove base—is never marred by mop marks or cleaning—has the same durability as expensive bases heretofore used to get flexibility. Standard sections 18" long. Furnished in 4" and 6" heights.

DAVID E. KENNEDY, INC.

This is the complete range of colors in Kennedy's asphalt tile — Kentile. We will be glad to send actual samples to any architect requesting them on his own letterhead.

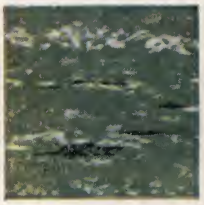
ROCKEFELLER CENTER BLDGS., N. Y.
(Over 300,000 sq. ft. KENNEDY FLOORING installed)



BARDILLA (238)

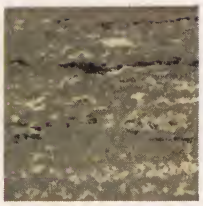
MORENA GREEN (131)

RUSSET (239)

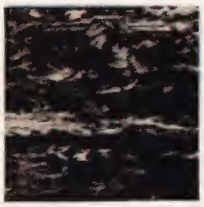


SEA GREEN (228)

BATTLESHIP GRAY (138)



NAPOLEON GRAY (222)



GRAND ANTIQUE (204)

BLACK (102)

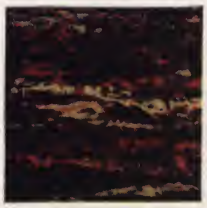
HENNA (139)

EMERALD GREEN 130)

MOROCCO BROWN (104)

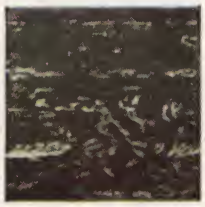
BUFF (127)

VEINED CARNELIAN (206)

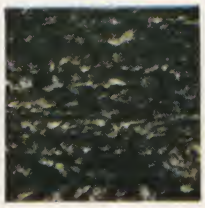


EGYPTIAN PORPHYRY (203)

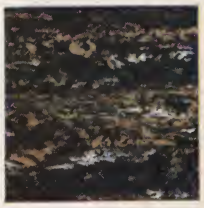
FAMOSA (226)



GRAY BARDIGLIO (230)



CIPPOLINO (214)



SERPENTINE (229)

JADE GREEN (126)

SUMAC RED (129)

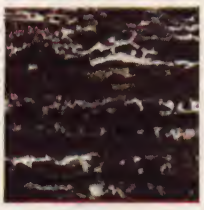
OAK GREEN (105)

PEACOCK BLUE (122)

WHITE (132)

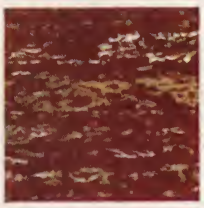
TOLEDO RED (109)

YELLOW VERONA (227)

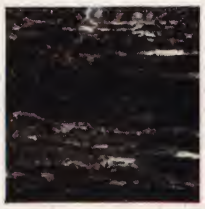


BROWN LEVANTO (212)

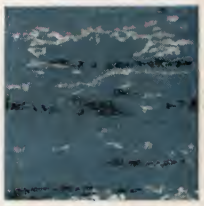
GREEK SKYROS (221)



LIGHT ALGERIA (223)



VERDE ANTIQUE (209)



FLEECY CERULEAN (225)

SCOTCH GRAY (108)

ANDORRA TAN (110)

AZURE BLUE (128)

LEATHER TAN (103)

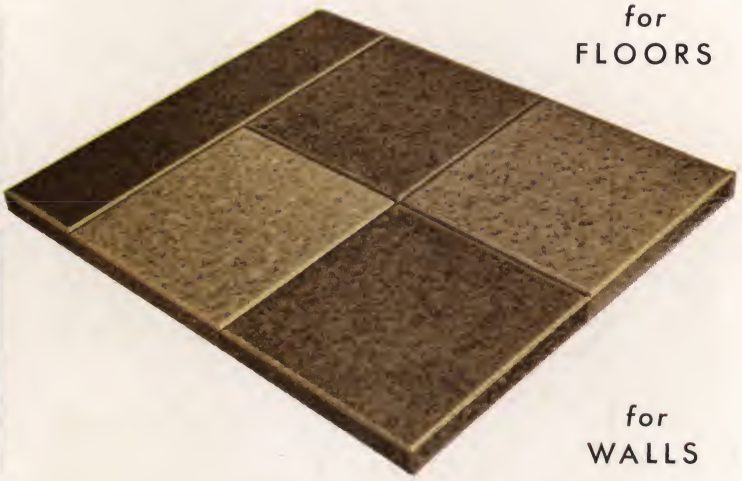
QUARRY RED (106)

DOVE GRAY (125)

DAVID E. KENNEDY, INC.

KENCORK

(CORK TILE)



for FLOORS

for WALLS

KENCORK absorbs and deadens sound —providing a definitely quieter office

KENCORK makes apartment rooms cooler in summer — warmer in winter

KENCORK on walls provides a uniquely rich yet subdued background and a highly effective sound deadener

Specification for Kencork
(Cork flooring with square and bevelled edges)

All finished floors in (enumerate rooms) shall be $\frac{5}{16}$" (also furnished in ½" thickness) Kencork with square edges (if bevelled edges desired mention "with bevelled edges"), manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., and installed by its approved flooring contractor. Kencork shall be composed only and wholly of clean cork shavings, compressed in closed steel moulds at 1800 lbs. to the square inch and baked for five hours at a temperature of about 650° F. Weight shall average not less than 20 oz. or more than 23 oz. per sq. ft. for all ½" thick tile and not less than 12½ oz. or more than 14½ oz. per square foot for all $\frac{5}{16}$" tile. Kencork shall be sanded to a fine, smooth finish after installation (omit this sentence if Kencork with bevelled edge is specified).

Field tile shall be 9 x 9". (Can be furnished in any size that is a multiple of 18 x 36". Mention size you wish) with one to three strip straight line borders; shades to be selected by the architect. All flooring shall be of American manufacture.

Kencork shall be fastened to concrete backing throughout the entire surface with adhesive as recommended by the manufacturer. Where installed upon a wood backing, a layer of 15 lb. saturated felt paper with butt joints shall be fastened over the entire wood floor with linoleum paste. **Kencork** shall be cemented over this felt paper with an adhesive as recommended by the manufacturer.

If **Kencork** is to be installed over concrete in contact with the earth, specify a 1:4 cement top finish, and add the following to the aforementioned specification.

All **Kencork** that is to be installed over concrete in contact with the earth shall be of the square edge type of ½" thickness (bevelled edges cannot be used here) and shall be set in a special asphalt compound as recommended by Kennedy with waterproof cement for the joints. Each tile shall be bradded with headless steel brads driven below the surface in accordance with Kennedy's standard instructions.

If Straight or Cove Base Is Desired, Add—Kencork Cove (straight) base 6" high (also furnished in 4" height) shall be furnished and set around walls of all rooms having Kencork floors.

If Kencork Wainscoating Is Desired—Specify thickness, height and rooms in which it is to go.

If a Finish Is Desired—There are two types of finishes for Kencork, a wax finish and Kenseal Finish. Kenseal Finish costs more than wax finish.

Wax Finish—After Kencork is installed it shall be given one coat of sealer and two coats of wax as recommended by the manufacturer. Last coat of wax to be buffed.

Kenseal Finish—After Kencork flooring is installed it shall be given one coat of Kennedy filler, three coats of Kenseal Finish and one coat of Finish Material, all applied in accordance with Kennedy's instructions.

HOOD RUBBER TILE FLOORING

Rubber Tile Flooring in Modernistic Design

Specifications

All finished floors in (enumerate spaces) shall be Hood Rubber Tile furnished by David E. Kennedy, Inc., and installed by its approved Flooring Contractor. Thickness shall be (available in ⅛", 3/16" and ¼"). Size and color of tile shall be selected from Kennedy's standard colors and sizes. Each tile shall have a uniform thickness and all sides of each tile shall be cut to a true edge. Adhesive for fastening the tile shall be as recommended by the manufacturer.

If Hood Rubber Cove Base Is Desired, Add—Hood Rubber Cove Base 4" high (also furnished in 6" height) shall be furnished and set around walls of all rooms having Hood Rubber Tile Floors.

Rubber Tile Flooring Installed in an Office

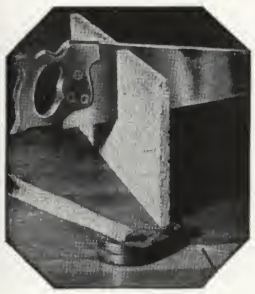
KENCOR CORK BULLETIN BOARDS

Specifications

Furnish and install KENCOR Bulletin Boards and chart boards as shown on drawings. KENCOR tacking boards shall be furnished above all blackboards as shown on drawings. All KENCOR boards shall be of the manufacture of David E. Kennedy, Inc., Brooklyn, N. Y. They shall be of uniform ½" thickness, consisting of sheet cork cemented to a special backing as recommended by the manufacturer. Wood grounds shall be securely set against which to fasten the KENCOR Bulletin Boards. The color of the KENCOR shall be tan (also furnished in green).

X-ITE For Floors and Walls

The Material That Is Handled Like Wood, But Wears and Looks Like Stone



X-ITE is a molded material of wood fibre, binder and color pigments. It combines the warmth and workability of wood with the stateliness of stone or marble. Sizes and colors are available to harmonize with any scheme. No painting or finishing is required. It is installed by nailing across wood furring or bonding against masonry or plaster. It has definite acoustical value.

X-ITE can be molded at the factory to architect's specifications for wall ornaments, arches, pilasters, window stools, etc. Standard thickness, 5/16".

COLORS

Standard
Gold, Ivory, Drab, Green, Red, Dark Brown, Tangerine, and Black.

Special
Pale Green, Moss Green, Light Gray, Stone Gray, Light Brown, Shell Pink, Blue, and Olive.

SIZES

Standard

5½" x 5½"	8½" x 8½"	8½" x 47½"	17½" x 23½"
5½" x 11½"	8½" x 11½"	9" x 17½"	17½" x 47½"
5½" x 47½"	8½" x 23½"	11½" x 17½"	

Special

2½" x 2½"	4½" x 4½"	15½" x 15½"
3" x 3"	11½" x 11½"	17½" x 17½"

Specifications

Furnish and install in (insert here the areas affected) X-ITE (walls) (floors), as manufactured by David E. Kennedy, Inc., Brooklyn, N. Y., erecting same strictly in accordance with manufacturer's specifications and installation instructions. Thickness of X-ITE shall be 5/16". Size and color shall be selected from manufacturer's standard sizes and colors.

At Left:

The Adaptability of X-Ite to Various Architectural Styles Is Suggested In This View of a Hotel Lobby

X-Ite was used to blend with decorative scheme and give walls noise absorption qualities.

X-Ite Gives Free Play to Artistic Expression

The decorative star pattern in this X-Ite floor was cut on the job by the contractor.

MEMORANDA

Floors
THAT ENDURE

The TILE-TEX Story

The Company

The Corporation has, for many years, been engaged solely in the manufacture of asphalt floor tile and accessories. The personnel represents many years of successful experience in blending and adapting asphalts.

The Company enjoys a strong financial position and offers back of the product a responsibility upon which the architect and his client can confidently depend. References: Dun & Bradstreet, Inc., Chicago, Illinois and City National Bank & Trust Company of Chicago.

Description

Tile-Tex is composed entirely of inert materials. The major ingredients are natural asphalt and other bitumens of highest melt point and quality, asbestos fibers and pure mineral pigments; these are combined with the necessary blending agents. All raw materials are under complete and competent laboratory control. The knowledge and experience necessary to produce successfully a uniform product are available.

Manufacturing

A well equipped factory operates twenty-four hours per day to meet demand and maintain adequate stocks. Reserve production facilities are provided for emergency periods, insuring prompt shipping and installation service.

The ingredients are thoroughly amalgamated through the medium of heat and pressure and in sheet form are calendered to a uniform thickness. These sheets are cut by a special process to accurate, rectangular tile with sharp, clean edges.

Installation Facilities

Tile-Tex is installed by competent, approved resilient floor contractors located at strategic points throughout the country, aided by the supervision of experienced facory representatives.

Factory representatives are available for localized architectural service.

Tile Thickness

Tile-Tex is made in three standard thicknesses—⅛, $\frac{3}{16}$, and ¼ in. Special thicknesses will be made to order, provided such orders are of sufficient size to warrant their production.

Tile Styles

Tile-Tex is furnished in the following shapes and sizes:

Standard sizes—6x12 in., 6x18 in., 9x9 in., 9x18 in., 9x27 in., 12x12 in., 12x24 in., 18x18 in., 18x24 in., and No. 87 Hexagonal (6″ on a side).

Special sizes—3x3 in., 3x6 in., 4x4 in., 4½x4½ in., 4x12 in., and 6x6 in.

Feature Strips—Cut to order in multiples of ½ in. from ½ to 3 in.

Colors

Four lines of colors in Tile-Tex offer a brilliant array of seventy-one plain and marbelized effects. See color charts on following pages.

TILE-TEX Characteristics

1. **Resilience and foot comfort**—Tile-Tex is ideally suited for use where quiet is desired. Its resilience is enduring because no oxidation or hardening is possible. It is extremely comfortable under foot, and a boon to those who must stand all day long.

2. **Durability under severe service**—Tile-Tex floors were first laid fourteen years ago. Original installations are still giving good service and will continue to do so for a long time to come. In schools, stores, lobbies and corridors where traffic is severe Tile-Tex will perform admirably.

3. **Proof against moisture**—Tile-Tex, impervious to moisture, can be laid at or below grade on concrete floors that have not been waterproofed for dampness. There is nothing in Tile-Tex that can rot or disintegrate.

4. **Stain and scar proof**—Ink, iodine, and other common sources of stain, have no effect on Tile-Tex Floor Tile. Burning matches or lighted cigarettes leave no permanent scar.

5. **A safe, non-slip surface**—Unlike other types of tile, Tile-Tex is non-slip, even when wet. It provides a safe, sure footing, and for this reason is widely specified for use in schools, stores, offices, and corridors.

6. **Highly fire-resistant**—Tests by Columbia University, New York City, show Tile-Tex to be substantially incombustible. Compared with other types of resilient floor tile it ranks highest as a fire-resistant.

7. **An efficient electrical insulator**—Tile-Tex is also an electrical insulator, having exceptional dielectric strength.

8. **Easy to maintain**—Since the surface of Tile-Tex is so smooth and closely textured it does not originate dust—maintenance is simple and inexpensive. An occasional mopping with mild soap and water is sufficient. Where a wax surface is desired, we recommend the use of Tile-Tex Water Wax.

9. **Colors permanent**—Tile-Tex color and beauty are permanently embedded in each tile.

10. **Harmonious color effects**—The many color combinations possible with seventy-one plain and marbleized effects make it easy to satisfy every taste. Harmony with every color scheme is available. When planning your floor make it beautiful with Tile-Tex.

11. **New, improved flexibility**—Tile-Tex is now manufactured sufficiently flexible for successful application on good wood sub-floors as well as on cement sub-floors. It molds itself to uneven surfaces without fracturing or straining the tile.

12. **Rigid standards of quality**—Tile-Tex is made up to a standard—not down to a price.

The TILE-TEX Company

Chicago Heights, Illinois

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY

Floors

of Lasting Beauty

Live, brilliant beauty is permanently built into Tile-Tex. Here is no skin-deep loveliness that fades with the years to drab appearance, but real thoroughbred colors that stay bright as traffic marches on.

Tile-Tex is adaptable to almost any area that demands maximum floor value at minimum cost. Houses of worship, hospitals and homes are only three of many types of buildings that find their floor problems answered by Tile-Tex.

(Below) Tile-Tex goes modern in this 20th Century bedroom, in a pattern in step with the appointments of the room.

(Top above) Tile-Tex in the aisles of this church solves the floor problem without strain on feet or budget.

(Below) A clean, attractive Tile-Tex floor cushions the footsteps in this modern hospital.

Specification Data

1. **Material**—shall be Tile-Tex as manufactured by The Tile-Tex Company, Chicago Heights, Illinois. Where special lines of Tile-Tex flooring are required, specify as follows:

   (a) For areas subject to grease and food abuse, specify "Grease-proof Tile-Tex"—(see page 8 for available colors).

   (b) Where wood sub-floors or slightly uneven sub-floors are to receive Tile-Tex, specify "Flexible Tile-Tex"—(available in all Standard and De Luxe colors).

   (c) Where mortar-joint effect is desired, specify "Borderjoint Tile-Tex"—(information sent on request).

   (d) Where acid-resisting floors are required, specify "Economy Tile-Tex"—(see page 8 for available colors).

2. **Scope**—all areas so indicated in schedule of floors or on plans and details.

3. **Foundations (sub-floors)—**

   (a) Over double wood floors.
   These wood floors shall be smooth and sound and top floor composed of strip wood flooring, not wider than 3″, tongue-and-grooved and sanded smooth, nailed tight and free from any springiness. Wood floors shall be subjected to approval of the Tile-Tex contractor before application of Tile-Tex. Installation of Tile-Tex shall be made in strict accordance with the directions of The Tile-Tex Company, and shall include the application of Tile-Tex Felt before application of tile. (Specify Flexible Tile-Tex in $\frac{3}{16}$″ or ¼″ thicknesses for use over wood sub-floors.)

   (b) Over single wood floors.
   Install ½″ to ¾″ thickness of Tile-Tex Asphalt Floorcote in strict accordance with directions of The Tile-Tex Company. Tile-Tex Asphalt Floorcote shall be applied over expanded metal lath or suitable wire mesh reinforcement nailed to the wood sub-floor.

   (c) Over cement sub-floors.
   Cement sub-floors shall be steel troweled to a smooth finish and free from irregularities, holes, scale, and in all ways suitable to receive Tile-Tex. The cement sub-floor shall be subject to the approval of the Tile-Tex contractor before application of Tile-Tex. Installation of Tile-Tex over cement sub-floors shall be made in strict accordance with the directions of The Tile-Tex Company.
   NOTE: Where cement sub-floors are at grade or below grade, cement sub-floors shall be primed with Tile-Tex Primecote before application of tile.

   (d) Over Gypsum Plank or unfinished concrete slab.
   The Tile-Tex contractor shall install ¾″ to 1″ thickness of Tile-Tex Asphalt Floorcote in strict accordance with the directions of The Tile-Tex Company. Responsibility for the smoothness and levelness of the Tile-Tex Asphalt Floorcote shall rest upon the Tile-Tex contractor.

4. **Thickness, Colors and Designs.**
   All Tile-Tex shall be (⅛″), ($\frac{3}{16}$″), or (¼″) in thickness. All Tile-Tex shall be (Marbleized) or (Plain) and laid according to the schedule and designs for Tile-Tex floors as found in these specifications.

5. **Bases.**
   (a) Where Cove Base is desired, use the following specifications:
   In all areas where Tile-Tex flooring is called for, Tile-Tex Molded Cove Base (6″), (5″), or (3½″) high shall be installed in conjunction with the Tile-Tex flooring, in strict accordance with the directions of The Tile-Tex Company governing the installation of Cove Base.

   (b) Where Straight Base is desired, specify as follows:
   In all areas shown on plans or indicated in Base schedules, install Tile-Tex Straight Base, 5″ high, in strict accordance with the directions of The Tile-Tex Company governing the installation of this type of Base.

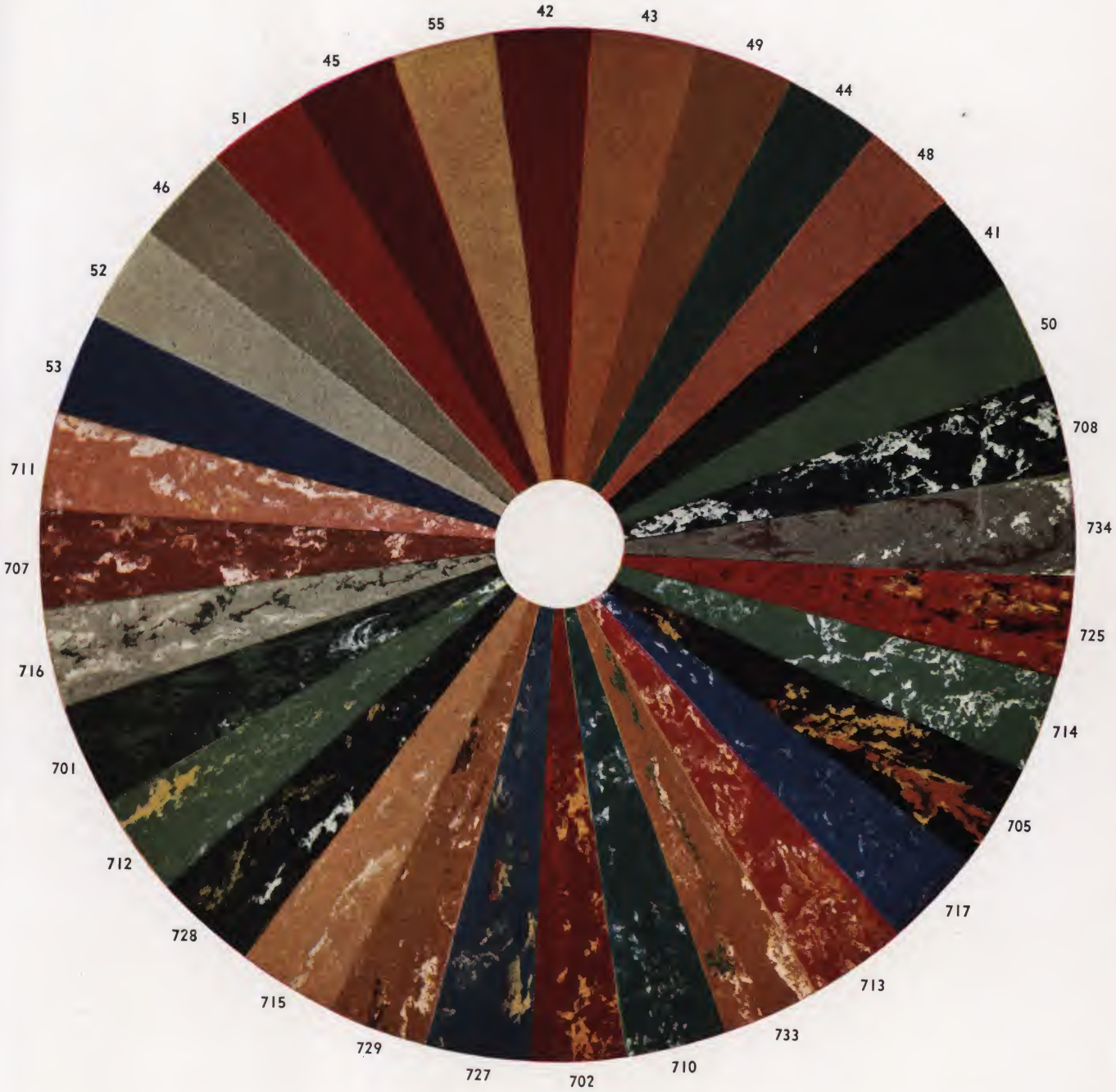
6. **Installation.**
   Installation of Tile-Tex flooring, and/or Floorcote and/or Cove Base shall be made only by an authorized and approved Tile-Tex contractor.

7. **Guarantee.**
   These floors shall be guaranteed jointly by The Tile-Tex Company and the Tile-Tex contractor against defects in workmanship and materials for a period of one year from date of completion.

NOTE: Copies of the Layers Handbook, published by The Tile-Tex Company, are available to all architects on request.

Standard Colors

A complete range of solid and marbleized colors, from black to light gray. This color line can be installed over both wood and cement sub-floors that meet Tile-Tex specifications. Reasonable in cost— flexible — and exceedingly durable.



In the early days of manufacturing asphalt tile, color was a principal problem. Today, Tile-Tex offers you the most diversified selection of color in the entire industry. There are four separate color lines—namely, Standard, De Luxe, Greaseproof and Economy.

All four of these groups are equal in quality for general use and durability. The Economy and Greaseproof color groups, however, have specific virtues which enable you to meet the requirements of special areas more effectively than with Standard or De Luxe colors. Complete color charts on De Luxe, Greaseproof and Economy colors are shown on pages 8 and 9.

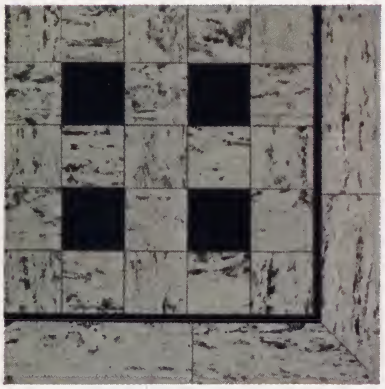
RESILIENT *Tile-Tex* FLOORING

EIGHTEEN COLORFUL AND ATTRACTIVE

Design No. 301
Field No. 715—No. 202
Border No. 715

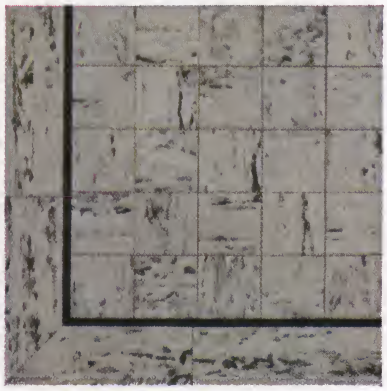
Design No. 302
Field No. 41—No. 47—No. 104
Feature Strip No. 41
Border No. 104

Design No. 303
Field No. 45—No. 49—No. 103
Feature Strip No. 45—No. 103
Border No. 45



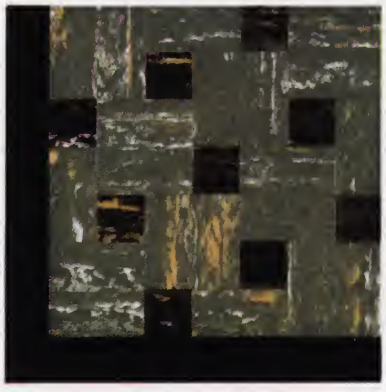
Design No. 304
Field No. 1009—No. 107
Feature No. 107
Border No. 1009

Design No. 305
Field No. 705—No. 713
Feature Strips No. 41—No. 51
Border No. 51



Design No. 306
Field No. 1010
Feature Strip No. 105
Border No. 1010

Design No. 307
Field No. 53—No. 43
Feature No. 43—No. 53
Border No. 43



Design No. 308
Field No. 712—No. 728
Border No. 41

Design No. 309
Field No. 42—No. 48—No. 51
Feature No. 42—No. 48
Border No. 48

RESILIENT *Tile-Tex* FLOORING

DESIGN SUGGESTIONS IN TILE-TEX FLOORING

Design No. 310
Field No. 707—No. 1003—No. 1013
Border No. 106

Design No. 311
Field No. 708—No. 716—No. 1009
Feature No. 708—No. 109
Border No. 708

Design No. 312
Field No. 707—No. 729—No. 1014
Feature Strips No. 729—No. 707—No. 1014
Border No. 707

Design No. 313
Field No. 701—No. 716—No. 1012
Feature Strips No. 41—No. 109
Border No. 41

Design No. 314
Field No. 104—No. 108
Feature Strips No. 41—No. 42—No. 104
Border No. 42

Design No. 315
Field No. 708
Feature Strip No. 109
Border No. 708

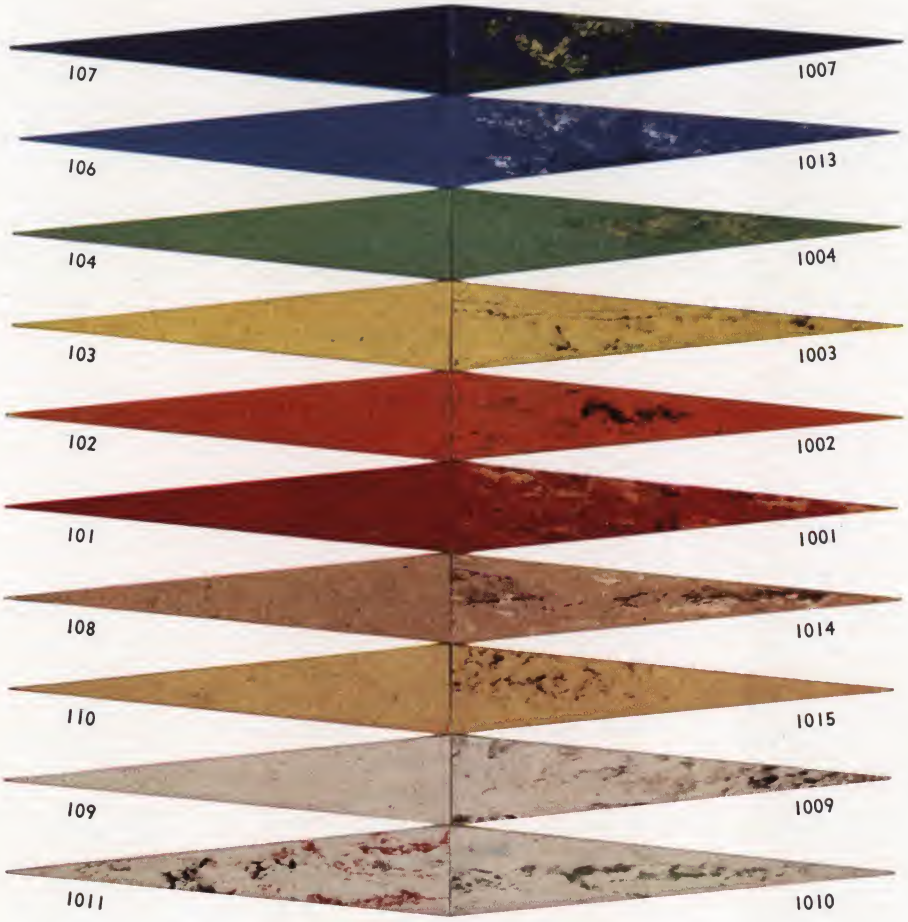
Design No. 316
Field No. 45—No. 104—No. 108
Feature Strip No. 43
Border No. 45

Design No. 317
Field No. 708—No. 716—No. 101—No. 1009
Feature Strips No. 101—No. 109
Border No. 708

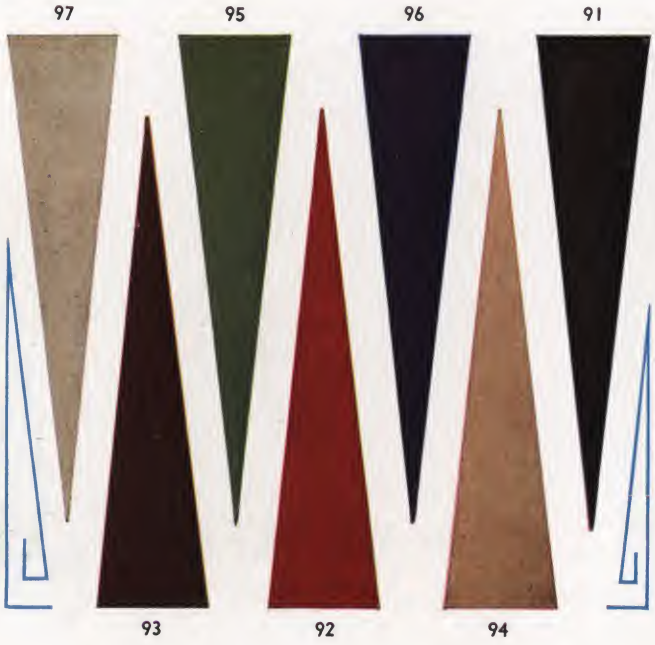
Design No. 318
Field No. 51—No. 41
Border No. 41

DeLuxe Colors

The Ultimate in Asphalt Tile



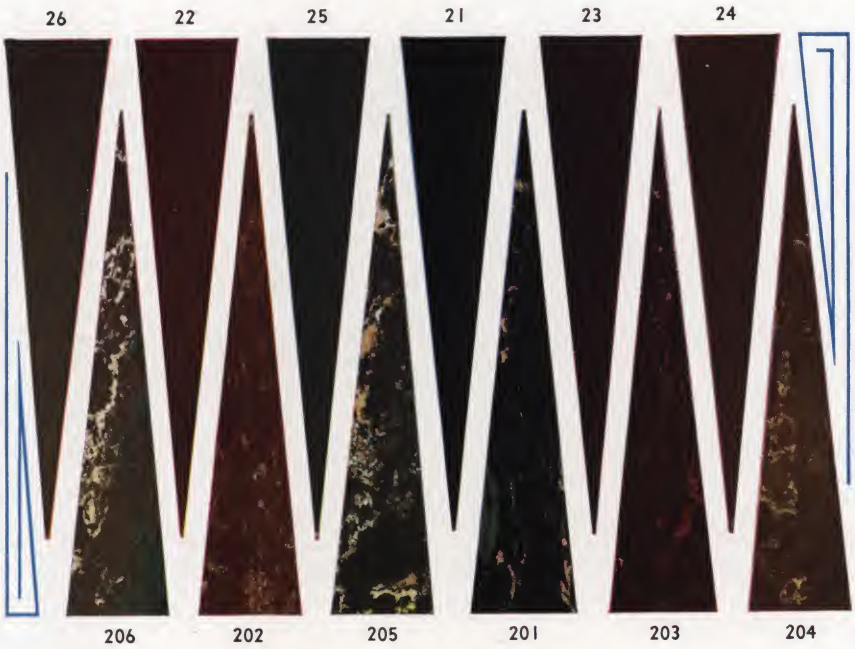
Greaseproof Colors



Ordinary floor tile of the asphalt type will not withstand extraordinary conditions created by excessive grease and food spillage, common in hotel, club, and restaurant kitchens. Designed to stand the gaff in such areas, Greaseproof Tile-Tex is not only proof against grease but possesses more than average durability and long life.

Greaseproof Tile-Tex should be used not only in public service kitchens, but in filling stations, garage offices, bakeries, butcher shops, dairy stores, and other areas where grease abuse is common. The seven attractive solid colors shown here more than meet the decorative requirements of such areas.

Economy Colors

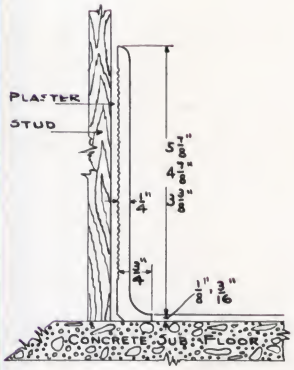


Stamina

Economy colors in Tile-Tex meet the high requirements of Tile-Tex performance standards, with something to spare. They answer the demand for a high quality, super-rugged tile at minimum cost.

Value

We honestly believe that these colors represent the greatest value obtainable in any flooring material. Institutions particularly find this color group easy on their budgets.



COVE BASE

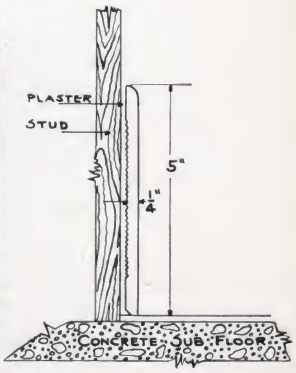
TILE-TEX Molded Bases

Tile-Tex Molded Cove Base is designed for installation in conjunction with the Tile-Tex Floor Tile, and is made 3½-in., 5 in., and 6 in. high, with the following other dimensions: ¼-in. thickness; ½-in. radius at cove; made to abut ⅛-in. and 3/16-in. thick floor tile. Six inch high base is made in 12-in. and 18-in. lengths, while 3½-in. and 5 in. heights are manufactured in 15 in. lengths. Six inch high base in 18 in. lengths is made specially flexible and is furnished in 3/16-in. thickness instead of ¼-in. thickness.

Tile-Tex Cove Base has a grooved or ribbed back surface insuring permanent adhesion to the wall. A smooth plaster wall, or Portland cement surface, provides a satisfactory backing. Molded corner pieces for inside and outside corners are available in the 6 in. high base, ¼-in. thick, and should be used where necessary to insure a presentable looking job free from handmade miters.

Tile-Tex Molded Cove Base is sanitary in every respect and makes possible the easy and economical cleaning and mopping of floors. The solid molded construction of these bases insures a sturdy, stable base that will stay in place.

Due to the demand for a straight base without the cove, we have made available Tile-Tex Straight Base, which is 5 in. high and ¼-in. thick. This base is a replica of Tile-Tex Molded Cove Base except that the cove at the floor is omitted. For specification data, see page 4.



STRAIGHT BASE

MADE UP TO A STANDARD WALLS TILE-TEX FLOORS NOT DOWN TO A PRICE

The TILE-TEX Company

Chicago Heights, Illinois

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY

Decorative Walls

by TILE·TEX

The Facts About the Material

What is TILE-TEX Wall Tile?

Tile-Tex Wall Tile, both from the standpoint of appearance and composition, is a refreshingly new and adaptable wall covering material. It is a flexible, individual tile manufactured from asbestos fibre, mineral coloring pigment, and special binders. A new manufacturing process was developed to produce the soft satin-like finish so desirable in wall treatments.

Low cost, simplicity and ease of installation, unexcelled wearability, and minimum upkeep cost characterize this unique tile. Since it is a unit laid wall, it can be used to advantage both in new construction and in remodeling existing buildings, where low cost is a paramount requirement. The beauty of finished Tile-Tex walls is strikingly new in its character and conception. Bright, clear contrasts, as well as soft blended pastel effects are possible with the diversified group of colors available.

With fifty-four colors and thirteen sizes, any decorative demand can be satisfied. Small sizes include 3x6, 4x4, 4½x4½, 4x12, and 6x6; large sizes include 6x12, 6x18, 9x9, 9x18, 9x27, 12x12, 12x24, 18x18, and 18x24. The use of feature strips and inserts, and the proper choice of trim in contrasting or harmonizing colors add further variety to its design potentialities.

Tile-Tex Wall Tile is extremely simple to apply. It can be applied directly to new or old plaster walls. It is not necessary to undergo the expense of costly wall surfacing in preparing walls for this new tiling. Finished plaster, wall boards, or any smooth, sound surface make an excellent backing for this smart, modern tile. Installation is made by competent approved wall covering contractors located throughout the country.

An adequate stock of all marbleized colors in the Aristocrat line is kept on hand to facilitate quick service on rush orders. These colors are stocked in the following sizes: 4x4, 3x6, 6x6 and 6x12.

A complete line of Tile-Tex Wall Fixtures is also available, so that fixtures in colors to match Tile-Tex Wall Tile can be installed. These fixtures are recess-type vitreous china fixtures of the highest possible quality. Six of the most popular colors for fixture purposes are kept in stock and can be shipped immediately on receipt of order.

Specification Data

Furnish and install Tile-Tex Wall Tile on all plaster walls and/or (.....) walls, as called for in the specifications, as follows:

1. **Material**—Wall Tile shall be Tile-Tex, as manufactured by The Tile-Tex Company, Chicago Heights, Illinois, in colors and designs as shown in schedule of wall finishes.

2. **Adhesive**—All adhesive used shall be Tile-Tex Wall Cement No. 1250.

3. **Preparation of Walls**—

   (a) Plaster walls shall be finished three coat plaster work, dry and free from all foreign matter and shall have a smooth steel troweled finish free from irregularities or trowel marks.

   (b) Wall Board Walls: All joints between sections of gypsum wall board, fibre board or ply board shall be filled with an approved grouting material so as to finish flush with surface of wall board.

4. **Installation**—Installation of Tile-Tex Wall Tile shall be in strict accordance with the written directions of The Tile-Tex Company. (Installation manual sent on request.)

   NOTE: Tile-Tex Wall Tile shall not be applied to walls which are damp on the surface, or to finished coat of plaster not thoroughly bonded to brown coat.

5. **Mouldings and Trim**—If desired, at inside and outside wall corners, install Tile-Tex Trim in colors as indicated on schedule of wall finish. Where Wall Tile is installed to wainscot height Tile-Tex Cap Rail shall likewise be installed.

6. **Tile-Tex Base**—Where not indicated in floor specifications, install Tile-Tex Cove Base (6″), (5″), (3½″) and/or Tile-Tex Straight Base (5″), in accordance with written directions of The Tile-Tex Company for installation of Tile-Tex Base.

7. **Cleaning of Walls**—After installation is completed, surface of Tile-Tex Wall Tile shall be thoroughly cleaned using a coarse rag, kitchen cleanser and water, removing all spots, adhesive, and other dirt.

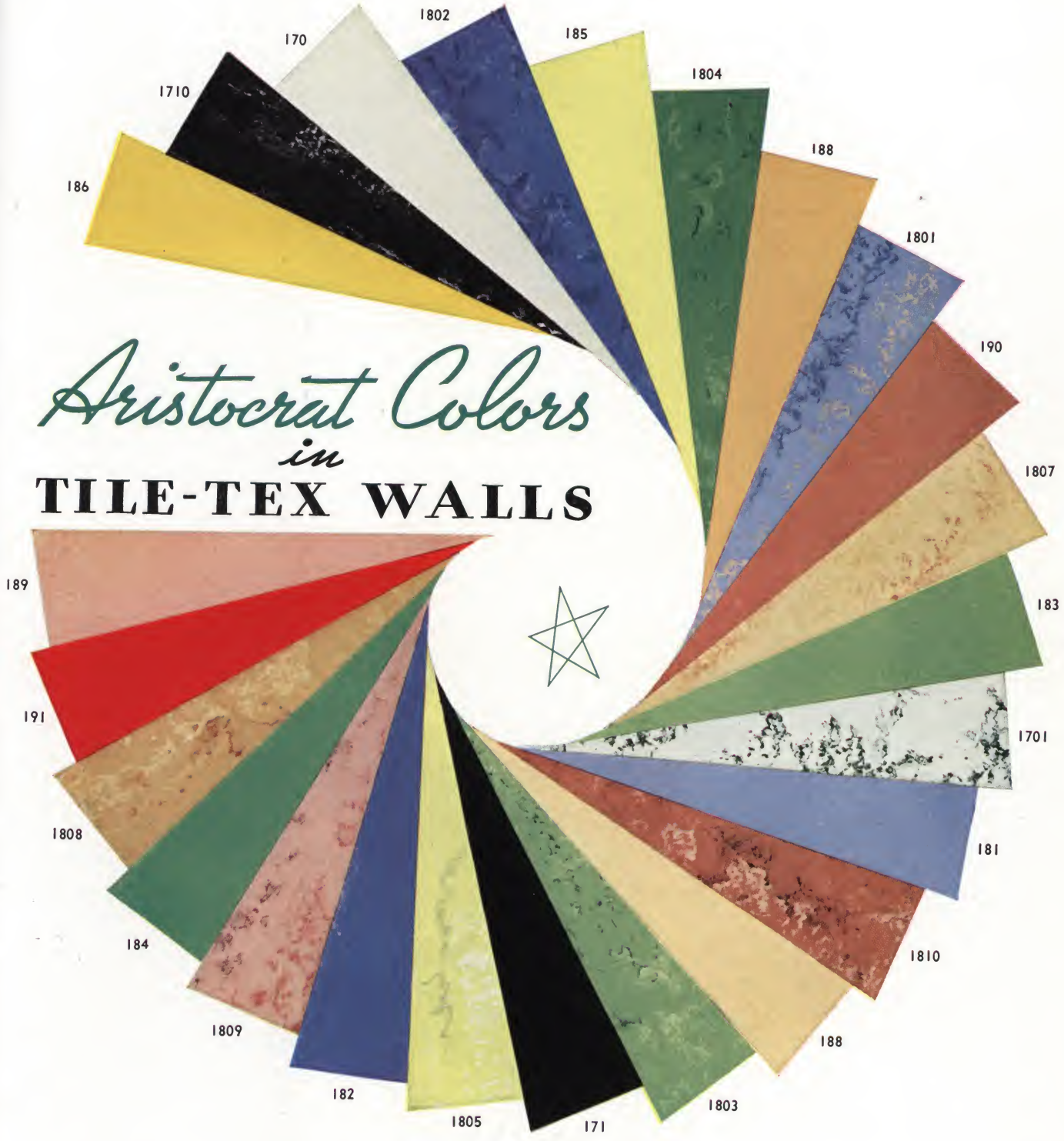
8. **Tile-Tex Wall Finish**—After walls are thoroughly clean and dry, apply one coat of Tile-Tex Wall Finish in accordance with manufacturer's specifications.

The TILE-TEX Company

Chicago Heights, Illinois

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY

A Color Range of Unsurpassed Beauty and Variety



Tile-Tex wall colors are the result of years of painstaking research on the part of the Tile-Tex laboratories. Twenty-four fresh, sparkling, modern colors that will fit into any color scheme. Here, indeed, is a group of colors, both plain and mottled, that quickens the pulse of every interior decorator.

Suggestive Wall Treatments

Since Tile-Tex Wall Tile is made in twenty-four colors and fourteen tile sizes, it is obvious that design variety is limited only by the imagination. Color and pattern flexibility are further increased by the addition of feature strips and special wall inserts. Below are shown six attractive wainscot treatments which illustrate modernistic as well as conventional methods in designing Tile-Tex walls.

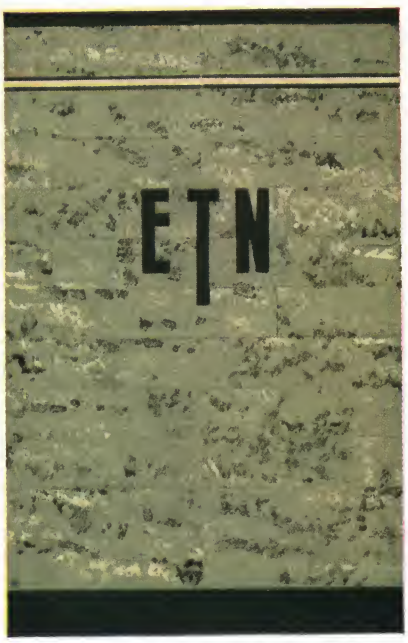
The use of monograms in contrasting colors and special inserts such as ships, stars, discs, diamonds, and other similar decorative touches add individuality and character to Tile-Tex walls.

Our Design Department is always at the service of architects, interior decorators and owners who would like suggestions as to the most effective treatment of their particular wall problem.

Design No. 1
Ashlar—Colors 1810—42—189

Design No. 2
Stripes—Colors 1701—1710—183

Design No. 3
Squares—Colors 1808—55—187



Design No. 4
Ashlar—Monogram
Colors 1803—105—187

Design No. 5
Stripes—Colors 1807—191

Design No. 6
Squares—Insert
Colors 1801—182—189

TILE-TEX Molded Wall Trim

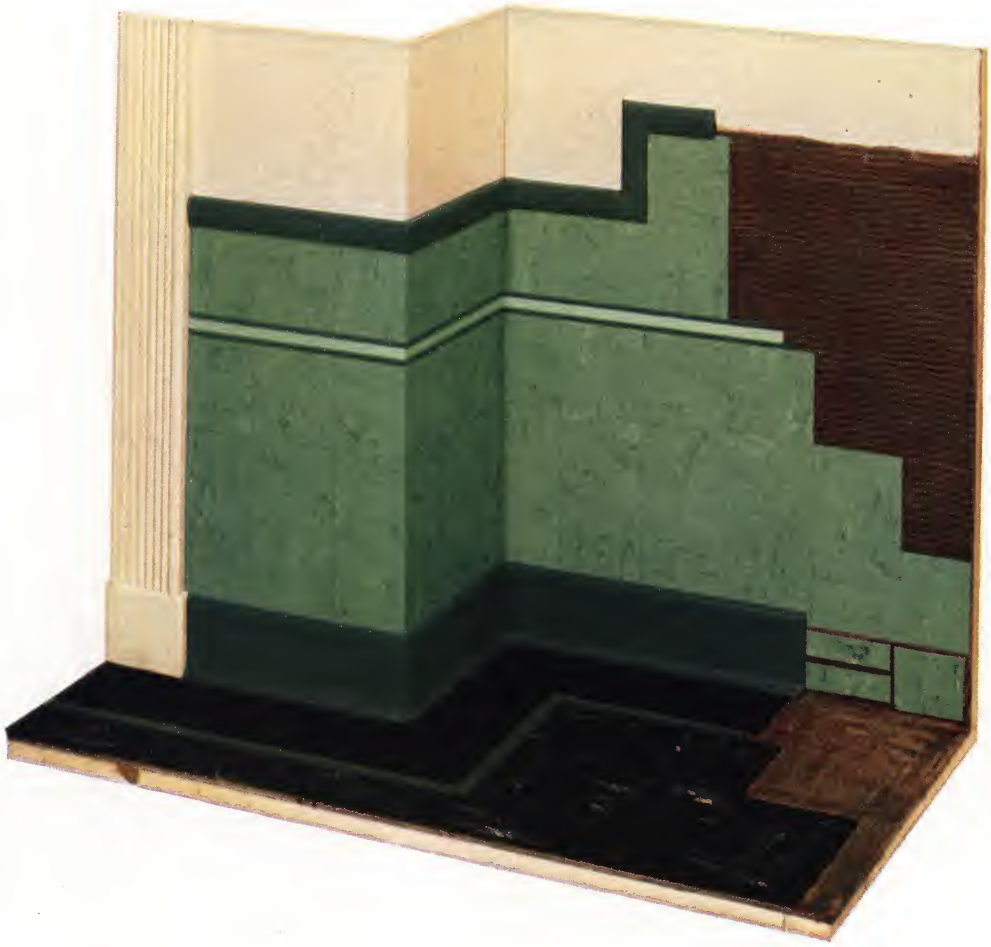
WT-8

WT-12

TILE-TEX Molded Wall Trim

Tile-Tex Molded Wall Trim is available in all colors in the Aristocrat color line, making possible further decorative opportunities. These five pieces of molded trim include cap rail, inside and outside corner cap pieces, and inside and outside corner strip mouldings. In certain instances, the use of these accessories is necessary to secure satisfactory treatment of corners and exposed edges.

WT-11



WT-10

WT-9

Above is shown a section of wall and floor partially installed, illustrating the proper application of Tile-Tex wall adhesive and the erection of Tile-Tex Wall Tile in conjunction with cap rail, feature strips, Tile-Tex Cove Base, and Tile-Tex flooring. Both inside and outside corners in this section are treated without the use of corner strip mouldings so as to permit the pattern of the wall to flow without interruption around the corners. Complete details on all points involving the erection of Tile-Tex Wall Tile are discussed thoroughly in the Tile-Tex Wall Tile Installation Manual—available on request.

WALLS
TILE-TEX
FLOORS

The TILE-TEX Company

Chicago Heights, Illinois

EASTERN SALES OFFICE, 101 PARK AVE., NEW YORK CITY

SECTION 11

CONTINUED ⟶

THOS. MOULDING FLOOR MFG. CO.

EXECUTIVE OFFICES

165 West Wacker Drive, CHICAGO, ILL.

ATLANTA, GA., Red Rock Building
DES MOINES, IOWA, Hubbell Building
MINNEAPOLIS, MINN., Thorpe Building
NEW YORK, N. Y., Grand Central Terminal Building
PHILADELPHIA, PA., Architects Building
ST. LOUIS, MO., Chemical Building

DISTRICT SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

THE COMPANY

Thos. Moulding has been in the business of manufacturing and installing floors for over twenty years. Wide experience and genuine responsibility assure you a dependable job.

The factory, located on the Belt Railroad, Chicago, Ill., is a modern plant with an adequate capacity for both steady and peak demand. It maintains a laboratory, completely equipped for research, and thoroughly tests both raw and finished goods to assure uniformity.

Thos. Moulding Floor Mfg. Co. and other approved flooring contractors contract to install Moultile anywhere in the United States and nearby countries. Skilled mechanics are employed.

THOS. MOULDING MOULTILE

Reinforced . . . Flexible . . . Master Asphalt Tile

What It Is—Moultile Master Asphalt Tile is composed mainly of especially selected thermoplastic gums, asbestos and other fibres, and pure, rich, non-fading mineral pigments. Ingredients are thoroughly amalgamated by machine and then calendered into sheets of uniform thickness. These sheets are cut to accurate rectangular sizes with square, clean-cut edges.

Made to Federal Specifications—Moultile is made to Federal Specification No. SS-T-306 which specifies exacting standards of strength, flexibility, size, firmness and thickness.

Adaptability—Moultile is adaptable for use in all types of buildings as a finished floor laid over smooth subfloors. (See next page for subfloor requirements.) Special types of Moultile have been developed to meet special installation conditions.

Reinforced for Extra Strength and Durability—By use of special reinforcing materials and processes all Moultile is reinforced to give greater strength and durability for this type of material. Moultile resists impact and abrasion of traffic over a long period of years. It will endure a lifetime. Its surface is not roughened by friction. It has no appreciable coefficient of expansion or contraction to cause curling at joints or buckling. It is truly inert and remains permanently bonded to the subfloor, being fastened with an asphaltic cement which is neither affected by the dampness nor alkali ever present in cement. Moultile Reinforced also means firmness under the weight of desks, chairs, and other standing loads.

Flexible for Greater Comfort—There is a resilience and elasticity to Moultile which everyone enjoys, plus the additional comfort factors of non-slipperiness and quiet under foot. Because of these characteristics, Moultile is especially well adapted for installation in areas of heavy foot traffic, such as lobbies, corridors or stairways. These properties are permanent, as the material does not oxidize, dry out, or dust.

Because of its flexibility, Moultile quickly seats itself to the under-floor, permitting immediate use after installation.

Non-absorbent and Sanitary—There is no absorption, no rotting, no odor.

Fire-resistant—Moultile will not support combustion or ignite from the surface.

An Electrical Insulator—A positive electrical non-conductor, Moultile is especially adaptable to areas surrounding electrical equipment.

Ideal for Basement Floors—Moultile can be laid with permanent results over cement resting on the ground. Moultile will permanently bond, does not buckle or loosen and will not rot or decompose. Moultile is laid in an asphalt cement which is affected by neither the alkali nor the dampness ever present in cement floors resting on the ground. It is the solution of the problem of floorings over cement on the ground.

Low Maintenance Cost—Properly cared for, Moultile endures a lifetime. Use the following type materials: *For Waxing,* the self-polishing water wax variety. *For Washing,* mild neutral non-caustic soaps. *For Sweeping,* use the special sweeping compound developed by us.

Avoid use of the following: (1) Waxes smelling of turpentine, naphtha, benzine, or gasoline; (2) commercial sweeping compounds; (3) strong alkaline soaps or cleaning powders of any nature.

For your convenience we manufacture a full line of maintenance materials in accordance with above recommendations. *Permagloss*—a self-polishing water wax that produces a rich lustrous finish. *Kleenolene*—a non-caustic liquid soap made by us. *Sweepolene*—which contains no injurious oil (commercial sweeping compounds usually contain oils which will soften and discolor Moultile).

Special Moultiles for Special Conditions—Moultile Master Asphalt Tile is now made in a number of special types to suit varying conditions of service.

Moultile "Greaseproof"—For installations where heavy accumulations of oil or grease are likely to occur. It is identical in appearance with Standard Moultile.

Moultile "Acid-resistant"—Highly resistant to chemicals which are harmful to other types of floor covering. Ideal for school and industrial laboratory installation.

Moultile "Prewaxed"—All types, thicknesses and colors of Moultile are obtainable with a waterproof wax coating burnished right into the tile at factory. Moultile "Prewaxed" is highly resistant to soap, water and alkali, gives extra durability, and is less slippery than self-polishing floor waxes.

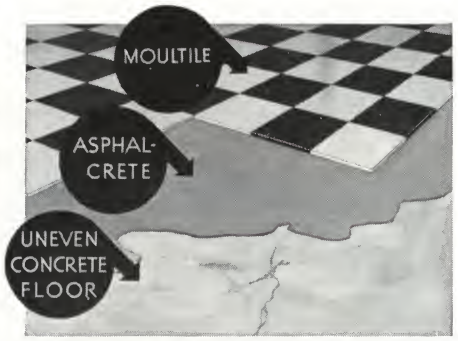
Colors—Approximately 60 plain and marbleized shades in browns, black, blues, white, grays, tans, greens, reds, etc. Special colors on request. Colors are permanently clear in tone, of attractive shades, and not subject to fading or deterioration.

Sizes—Moultile is furnished in ⅛, $\frac{3}{16}$, and ¼ in. thicknesses, and in the following sizes: 3x3, 3x6, 4½x4½, 6x6, 6x12, 6x18, 9x9, 9x18, 12x12, 12x24, 18x24 in., and long hexagon.

THOS. MOULDING ASPHALCRETE

A Treatment to Prepare Cement Floors For Laying Floor Coverings

Asphalcrete is a cushioned filler for smoothing up bumpy, uneven or poorly troweled cement floors to make a suitable foundation for floor coverings, such as asphalt tile, rubber tile, linoleum, etc. It is a successful and economical substitute for cement topping in new construction over which floorings are to be laid. The hazards of securing a satisfactory bond with cement topping without resorting to excessive weight and thickness are well recognized by contractors, engineers and architects. Asphalcrete bonds securely in thicknesses even less than ¼ in. without danger of loosening or buckling. Asphalcrete is resilient and comfortable. Contractors need only screed new cement underfloors in preparing for Asphalcrete.



This diagram shows how Asphalcrete is used to prepare concrete subfloor for floor coverings

What Asphalcrete Is—A composition of Thos. Moulding Asphalcrete Binder, water, portland cement and torpedo sand mixed in various proportions depending on thickness to be applied. Write for special bulletin giving formulae and application details.

How to Specify Thos. Moulding Asphalcrete—*To Smooth Old Cement Floors*—Uneven, bumpy, or poorly troweled cement floors should be smoothed with Thos. Moulding Asphalcrete, applied to a thickness of .. in., in accordance with manufacturer's instructions.

To Top Cement Floors Not Yet Poured—Leave cement subfloor ⅝ in. low and to a screed finish. Over same apply Asphalcrete in accordance with manufacturer's instruction.

Note: Cement subfloors steel troweled to a hard, smooth finish provide a suitable foundation for Moultile without further treatment.

THOS. MOULDING UNDERLAYMENT

A Treatment to Perfectly Prepare Wood Floors for Laying Floor Coverings

Underlayment is a light weight plastic cement which may be laid over wood floors in any condition, to provide a perfect foundation for all types of floor coverings—asphalt tile, linoleum, mastic, cork tile, rubber tile, linoleum tile.

Underlayment is non-inflammable—materially reduces fire hazard and earns lower insurance rates. Also contributes towards soundproofing wherever used.

What Underlayment Does—*For Old Wood Floors*—Floor coverings laid over old wood floors often fail to give satisfaction by reason of an unsatisfactory condition of underfloor. Thos. Moulding Underlayment corrects defects in old wood floors as follows:

(1) Levels up uneven wood sub-floors.

(2) Flows into the open joints—eliminates possibility of joint lines showing through on finished floor covering.

(3) Underlayment is of such strength that it diminishes the spring of springy boards.

(4) Forms a smooth seamless surface equivalent to a smooth cement floor on which to lay the floor covering.

(5) Will not crumble, buckle, or crack to cause similar defects in finished floor.

For New Construction—New top matched and dressed wood floors, no matter how smooth, level, or tightly jointed, are not a good foundation for floor coverings. Invariably, they soon shrink and curl, causing similar defects in the floor covering. Many a good flooring has been ruined by this action of new wood floors.

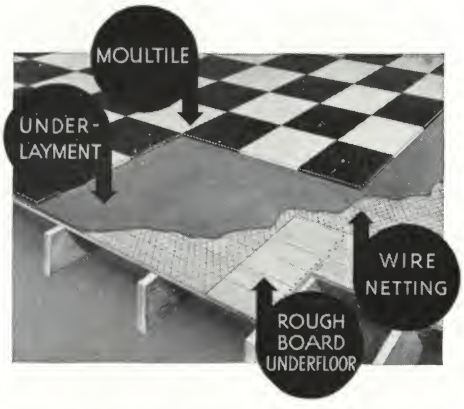
The solution is to omit the top dressed and matched floor, and apply Underlayment directly over the rough board underfloor.

This procedure plus Moultile usually costs less than finished top floor plus felt and Moultile.

Application—Underlayment can be installed complete in one day and is hard enough to walk on in 24 hours. Not more than 48 hours' time is required for Underlayment to dry sufficiently for application of floor covering. Laid to ½-in. depth, Underlayment weighs approximately 5 lbs. per sq. ft. Other thicknesses weigh in direct proportion.

Underlayment is not carried in stock anywhere, as it should be made for each particular job at the time required. It may be ordered direct from the THOS. MOULDING FLOOR MFG. CO. Orders should be placed 5 days before material is required.

How to Specify Thos. Moulding Underlayment—Thos. Moulding Underlayment shall be applied directly over (old wood top floors) (rough board underfloor) to a thickness of ½ in. in accordance with manufacturer's instructions.



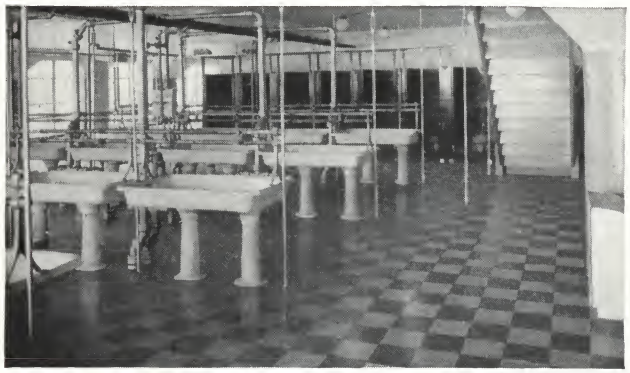
How Underlayment is applied to rough board underfloor. It may be similarly applied to old or new top matched and dressed wood floors

Other Methods of Preparing Wood Floors for Thos. Moulding Moultile

1. Over Rough Boards in New Construction or Old Wood Floors in Poor Condition—As an optional alternate to Underlayment, we can recommend three-ply Plywood, minimum thickness ⅜ in., wallboard finish, face nailed direct to the rough underfloor or old wood floor. Because Plywood is made in large sheets this type of foundation has comparatively few joints, and is less subject to expansion and contraction than finished strip flooring.

2. Over Existing Wood Floors in Good Condition—Where existing wood floors are firm, smooth, and tight jointed, satisfactory installations of Thos. Moulding Moultile, either ⅛ in. or $\frac{3}{16}$ in., are accomplished by first adhering Thos. Moulding Saturated Flooring Felt to the underflooring and then installing the Moultile over same. Prior sanding is advisable where ridges are apparent. Occasional wide grooves should be first grouted with Thos. Moulding Asphalcrete.

Thos. Moulding MOULTILE
Reinforced-Flexible
MASTER ASPHALT TILE
Suitable for Every Type of Installation



Wagner Electric Co., St. Louis, Mo.
Moultile over Thos. Moulding Asphalcrete on steel deck
CONDRON & POST, Engineers

Northern State Hospital, Sedro Woolley, Wash.
50,000 ft. Moultile
JAMES TAYLOR, JR., Architect

T. Y. Hewlett Residence, Dunedin, Fla.
T. Y. HEWLETT, Architect

W. T. Grant Store, Milwaukee, Wis.
30,000 ft. Moultile

Display Room, Remington-Rand, Inc., Chicago, Ill.

Gallatin County Court House, Bozeman, Mont.
Moultile in court rooms
FRED F. WILLSON, Architect

Moultile in Gymnasium, Junior High School, Moorhead, Minn.
Game lines also inlaid with Moultile
ELLERBE & CO., Architects

Design A

Design B

Design C

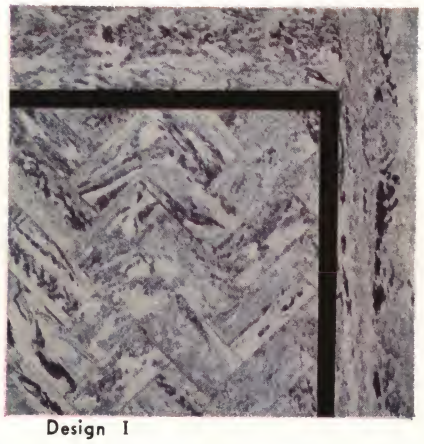
Design D

Design E

Design F

Design G

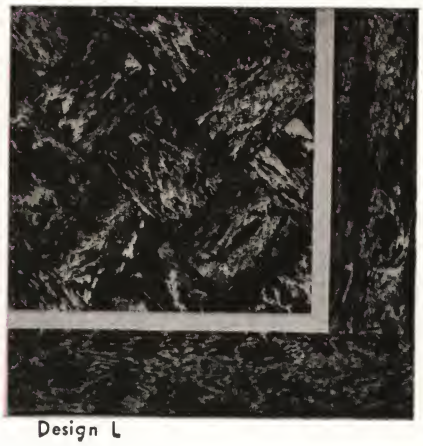
Design H



Design I

Design J

Design K

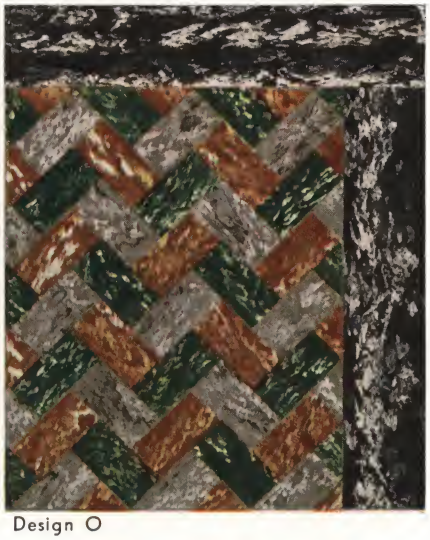


Design L

Although these illustrations show a particular design with a certain combination of colors, the same design can also be made with combinations of other colors in which Moultile is furnished.

Design M

Design N



Design O

Design P

Design Q

Design R

Design S

Design T

Design U

Although these illustrations show a particular design with a certain combination of colors, the same design can also be made with combinations of other colors in which Moultile is furnished.

Design V

Design W

Design X

Design Y

Design Z

Design AA

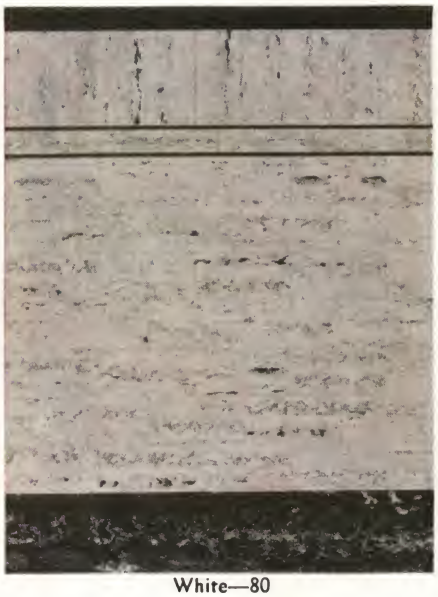
Design BB

Design CC

Design DD

THOS. MOULDING MOULTILE WALLS

Blue—82



White—80

Green—81

Red—87

Rose—84

Cream—85

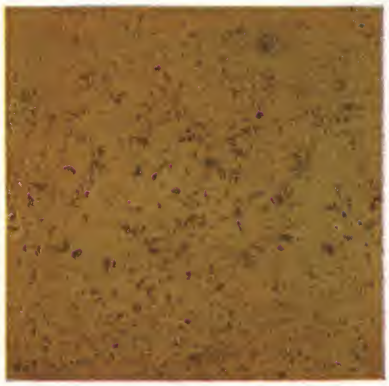
Tan—88

Lemon—86

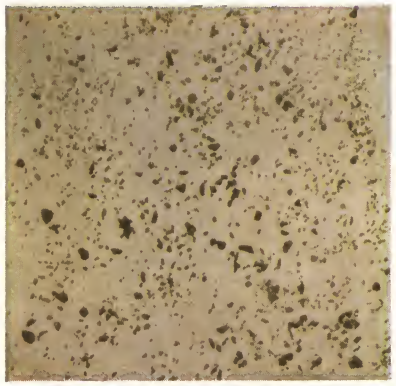
Black—83

Thos. Moulding
Safety-Tread
(Note: Non-Slip Chips)

Thos. Moulding
Moultread



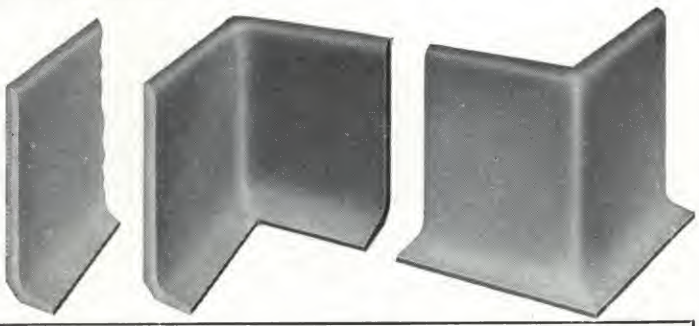
Thos. Moulding Safety-Tile
(Note: Non-Slip Chips)



Thos. Moulding Safety-Tile
(Note: Non-Slip Chips)

MOULTILE COVE BASE

Moultile Cove Base is now available to match all colors of Moultile Master Asphalt Tile. Moultile Cove Base is flexible, facilitating conformance with wavy walls. It is economical in cost—less than other resilient type bases and compares favorably with wood. It is also suitable for use in conjunction with floorings other than Moultile, such as rubber, linoleum, linoleum tile, etc. As a backing, the smooth plaster finish should be carried to floor level. See following table for technical data on Moultile Cove Base.



Specifications—Moultile Cove Base

Height	Length	Radius	Wall Thicknes	Lip Width (from base face)	Lip Thickness	Internal Corners	External Corners
6″	2′	3/8″	3/16″	13/16″	1/8, 3/16, or 1/4″	Each side covers 3 7/8 lin. inches of wall.	Each side covers 3 5/8 lin. inches of wall.
4″	2′	3/8″	3/16″	13/16″	1/8, 3/16, or 1/4″	None	None
3″	2′	3/8″	3/16″	13/16″	1/8, 3/16, or 1/4″	None	None

Specifications—Moultile Straight Base

5″	2′	None	3/16″	None	None	None	None

1/4″ wall thickness cove or straight base can be given on special request.

THOS. MOULDING MOULTILE WALLS

What It Is—Moultile Wall Tile is an enduring, beautiful economical wall tile, made from the same type of materials and fabricated by the same process as Thos. Moulding Moultile.

Adaptability—Moultile Wall Tile may be installed over smooth plaster. It is strong, durable, non-absorbent, sanitary and fire-resistant.

Low Maintenance Cost—Moultile walls are easily maintained by an occasional washing with a non-caustic soap such as Thos. Moulding Kleenolene. For a glossy appearance wax occasionally with Permagloss, self-polishing wax, which produces a rich, lustrous finish.

Colors and Sizes—Moultile Wall Tile is available in the eight colors shown, in 3/32-in. thickness, and in the following sizes: 3x3 in., 3x6 in., 4½x4½ in., 6x6 in., 6x12 in., 6x18 in., 9x9 in., 9x12 in., 12x12 in., 12x24 in. and 18x24 in.

How to Specify Moultile Wall Tile—Furnish and install Moultile Wall Tile on walls where called for in specifications as follows:

1. Material shall be Moultile walls as manufactured by Thos. Moulding Floor Mfg. Co., Chicago. Colors and designs as shown on wall finish schedule.

2. ***Adhesive***—All adhesive shall be Moultile Wall Cement.

3. ***Preparation of Walls***—New plaster walls shall be prepared to a smooth steel troweled finish, dry, and free from foreign matter. Old plaster walls should be free of paint, paper or calcimine.

4. Installation of Moultile walls shall be in accordance with manufacturer's instructions.

5. **Installation Instructions**—Trowel cement on smooth, dry wall, approximately one gallon per hundred square feet and immediately press tile in place. Internal angles or external angles may be butt or tile may be warmed on rear and molded into place. Where walls do not carry to ceiling use Thos. Moulding Wainscot Cap at top. Thos. Moulding Cove Base, 3 in., 4 in., or 6 in., in height should be used as the base board. Install cove base first and build Moultile Wall from top of base up. Clean walls after completion with Thos. Moulding Kleenolene and apply a coat of Permagloss wax.

THOS. MOULDING MOULTREAD

What It Is—Moultread is Moultile material molded into a tread and nosing combined, eliminating the need of metal nosings. Moultread may be installed over old or new treads of wood, cement, marble, steel, terrazzo, etc. Gluing only is required, no drilling or anchoring as in the case of metal nosing. Available in all Moultile colors. Two-foot length, 12-in. depth, thickness at nosing 1/4 in. and at rear 3/16 in. Cupped or dished spots should be first smoothed with Thos. Moulding Asphalcrete.

THOS. MOULDING SAFETY TREADS

Safety Treads are identical to Moultread except that they have abrasive chips incorporated at the front of the tread surface to give maximum non-slip protection.

THOS. MOULDING NON-SLIP SAFETY TILES

What It Is—Thos. Moulding Non-slip Safety Tiles are standard Moultile Asphalt Tile with non-slip chips incorporated during the manufacturing process. These chips give it a surface appearance similar to terrazzo, and provide positive, non-slip safety underfoot, even when wet. Otherwise, it has all the characteristics of standard Moultile, and is similarly installed.

Adaptability—Thos. Moulding Safety Tiles are suitable for use under revolving doors, in vestibules, stair entrances, ramps, in front of elevators, and wherever security against slipping is essential to prevent expensive injury suits. The fact that it is slip-proof when wet is particularly important. Installation of other non-slip floorings is often impractical due to the time required for installation, excessive weight and interference with existing levels. Thos. Moulding Safety Tiles can be installed in only a few minutes, and are immediately ready for use. Since they are laid directly on smooth subfloors to a maximum thickness of 1/4 in. established levels are not affected.

Colors and Sizes—Thos. Moulding Safety Tiles are available in all Moultile colors. One size only, 12x12 in. Thicknesses, 1/8 in., 3/16 in., and 1/4 in.

Restaurant, Bell Realty Co. Bldg., Toledo, Ohio
MILLS, RHINES, BELLMAN & NORDHOFF, INC., Architects

Men's Dormitory, University of Colorado, Boulder, Colo.
80,000 ft. Moultile
C. Z. KLAUDER & G. H. HUNTINGTON, Architects

Globe Superior Corp., Abingdon, Ill.
16,000 ft. Moultile in manufacturing areas

J. S. Schramm Residence, Burlington, Iowa
Moultile over Plywood subfloors
HOLABIRD & ROOT, Architects

Thos. Moulding MOULTILE
Reinforced-Flexible
MASTER ASPHALT TILE
Suitable for Every Type of Installation

Julia C. Lathrop Homes, Chicago, Ill.
500,000 ft. Moultile

Charity Hospital, Lafayette, La.
Moultile base, Moultile walls and cap
FAVROT & REED, Architects FRED J. NEHRBASS, Assoc. Architect

Capital State Bank, Des Moines, Iowa
Uneven subfloors smoothed with Asphalcrete and Underlayment before applying Moultile
A. MOORMAN & Co., Bank Builders

127 No. Dearborn Bldg., Chicago, Ill.
Moultile over tile floors in corridors and over old wood for tenants

O. W. Clifton Residence, Wilmette, Ill.
Moultile in basement recreation room

Science Bldg., Texas State College for Women, Denton, Tex.
20,000 ft. Moultile "Acid-Resistant"
Shirley Simons, Architect Preston M. Geren, Consulting Architect

Charity Hospital, Lafayette, La.
Moultile floors, Moultile base, Moultile walls and cap
Favrot & Reed, Architects Fred J. Nehrbass, Assoc. Architect

Colman Ferry Terminal, Seattle, Wash.
30,000 ft. Moultile
Arthur Loveless-Lester Fey, Architects

St. Coletta School, Jefferson, Wis.
14,000 ft. Moultile over Thos. Moulding Asphalcrete
E. Brielmaier & Sons Co., Architects

Library, La Salle-Peru Township High School, La Salle, Ill.
50,000 ft. Moultile
Childs & Smith, Architects

MEMORANDA

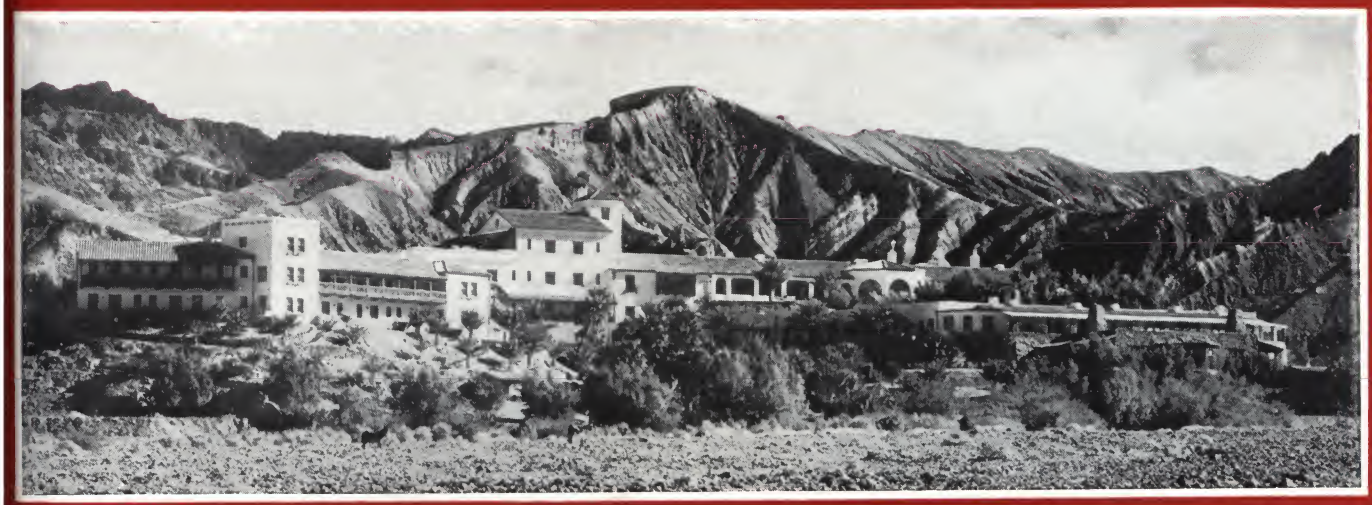
Approval

These interior views of Pacific Coast Borax Co.'s Furnace Creek Inn (exterior shown below) illustrate effective use of Azrock floor covering. Numerous such important Azrock installations testify to the building world's seal of approval.

AZROCK

(TRADE MARK REG. U.S. PAT. OFF.)

MICRO-CUT CARPET TILE



AZROCK CARPET TILE *is a superior mastic tile*

AZROCK CARPET TILE contains as one of its basic ingredients limestock rock asphalt, a material long famed for its many unique characteristics. It is an asphalt rock: a limestone thoroughly impregnated with a natural high grade asphalt. In the manufacture of Azrock, cotton and asbestos fibers also play an important part, since it is their random interlacing that gives greater strength and additional resilience to the tile. Mineral color pigments penetrate the entire thickness of tile to assure permanence of coloring.

All materials are thoroughly amalgamated and uniformly mixed, formed under extremely high pressure by passing through rolls. Following this, the dense tough sheets of the finished product are cut into accurate rectangular tile units. Azrock then is ready for use . . . a floor-covering tile distinctive in appearance, staunchly durable under constant service and unexcelled in its combined advantages.

The process of manufacturing Azrock is continuously under laboratory control, with competent engineers and chemists in charge. Azrock's modern factory is equipped with specially designed machinery, a guarantee of standard product to meet the strictest requirements, including Federal Government specifications. Production facilities are adequate to insure prompt shipment of orders.

Many advantages recommend AZROCK

It Is Micro-Cut. By means of a new exclusive process the cutting of Azrock Carpet Tile to micrometer accuracy provides a tile with edges that lay up tighter, quicker, closer than ever before possible in asphalt and mastic tile floor covering.

Minus dust-catching joints, Azrock can keep the sparkling freshness of a new floor years after it is laid. This micro-cut process was developed by Azrock's manufacturers and is available only with Azrock.

Azrock Is Resilient. A gentle resilience makes Azrock Carpet Tile especially desirable in buildings where a reduction of noise is essential. Azrock not only absorbs and minimizes the sound of walking steps, but its resilient surface is exceptionally comfortable and restful underfoot.

Azrock Is Durable. There's a long-life durability to Azrock Tile that especially recommends its use on floors that must give constant service. Capable of withstanding long years of hard wear, Azrock asks no favors of its users. Maintenance is simple and inexpensive.

Azrock Is Sanitary. Azrock is smooth-surfaced, creating no dust or dirt. It will not warp nor check and its micro-close tile joints leave no room for dust catching. The dense texture of the tile allows easy cleaning, simple maintenance. Azrock readily acquires a soft natural lustre under usage, but may be waxed if you desire.

Azrock Is Fire-resistant. Azrock is fire-proof when laid on concrete and, on inflammable types of subfloors, serves as a definite fire-retarder. Carelessly dropped cigars or cigarettes cannot permanently harm Azrock's surface and their marks are easily erased in ordinary cleaning. Azrock insulates against electricity and, also, against extremes of heat or cold.

Azrock Is Economical. Add to Azrock's long-life wearability and its inexpensive upkeep, the fact that Azrock costs no more to buy and install than many ordinary floor coverings, and it is immediately apparent that Azrock is one of the most practical and economical floor coverings you can specify.

Lay Azrock on Any Firm Subfloor. Before the development of Azrock Carpet Tile, asphalt tile installations over wood subfloors could not be made satisfactorily without expensive underlayments. Now, however, Azrock Tile can be laid successfully over any firm, smooth subfloor: wood, concrete, terrazzo, ceramic tile, marble or steel, old or new, and without the use of costly underlayments.

The flexibility of the tile adjusts itself admirably to slight irregularities without undue strain and also provides unusual recovery from indentations made by foot or furniture, or the passage of rolling equipment.

Lay Azrock Above or Below Grade. Azrock is impervious to dampness. This moisture-proof characteristic permits Azrock ordinarily to be installed on subfloors below grade without the necessity for expensive waterproofing.

Distinguished Record. The popularity of this ultra-modern and very versatile floor covering is evidenced by the sweeping number of installations all over this country, as well as a fast growing demand in export markets.

Azrock Carpet Tile is the ideal choice for floor covering in modern homes (from kitchen to recreation room!), in offices, stores, hospitals, libraries, schools, restaurants, theaters, churches, courthouses and all kinds of public or semi-public buildings. Its use is an important complement to every such type of new construction; and by means of Azrock, old floors too can be made modern at moderate cost and for permanent satisfaction.

Cove Base. Azrock Sanitary Molded Cove Base is available, whenever desired. It is made in standard wall height of 3½" and 6". Standard length of cove base is 12" and 18", standard thickness ¼", with ⅛" floor flap which can be used with either ⅛", $\frac{3}{16}$" or ¼" tile.

AZROCK

(TRADE MARK REG. U.S. PAT. OFF.)

SPECIFICATION DATA

SUGGESTED PROPOSAL FORM

I. Material

Material shall be AZROCK Carpet Tile Type C (for concrete subfloors) or Type W (for wood floors) as manufactured by Uvalde Rock Asphalt Company of San Antonio, Texas. The thickness of the tile shall be.....(1/8", 3/16" or 1/4"). The sizes, colors and patterns for each area shall be as listed hereunder:

(The sizes, colors and patterns with their identifying numbers are shown in other parts of this catalog).

(If not practical to make exact color selection, then specify that colors shall be selected from Groups.....and ....., giving approximate percentage of each group that will be required).

II. Installation

Installation shall be in strict accordance with the installation instructions and specifications of Uvalde Rock Asphalt Company and shall be made by an Approved AZROCK Distributing Contractor.

III. Scope

Scope—all areas so indicated in schedule of floors, or on plans and details.

COLOR SELECTION BY GROUPS

The AZROCK Carpet Tile line is divided into color groups based upon relative cost, there being several groups each of both plain and marbleized types. It is recommended that architect (or owner) specify the color groups from which the tile selection will be made, as this enables the AZROCK Approved Distributing Contractor to give a much closer bid than if no color range or group is selected prior to taking prices, since it eliminates the gamble on costs of material. It is suggested that color selection be made from AZROCK color charts or from Sweet's catalogue file and the pattern numbers specified. It should be remembered that there may be slight variations in colors and marbleizing which cannot be eliminated in manufacture due to slight variations in raw materials, temperatures, etc.

The color groups of AZROCK Tile are shown on our price chart published with each change in prices. This chart not only gives the different groups but also the price differentials between the various groups. Copy may be had on request.

TYPE C AND TYPE W

AZROCK Tile is manufactured under two different formulations in order to incorporate into the product those characteristics which make it best suited for the particular kind of subfloor being laid upon. Type C is intended for use on concrete above, at or below grade. Type W is manufactured especially for use over wood subfloors.

PRIMER and CEMENTS

1. Primer for use on concrete subfloors prior to installing AZROCK Tile shall be AZROCK Cut-back Asphalt Primer.

2. Cement for laying AZROCK subfloor sheeting on wood subfloors shall be a standard linoleum paste.

3. Cement for laying AZROCK Tile shall be AZROCK Type X Tile Cement.

4. Cement for applying AZROCK Cove Base shall be a standard rubber tile cement.

PROPER CONDITIONS FOR INSTALLATION

AZROCK Tile should not be installed until after all other trades such as plumbers, carpenters, plasterers, painters, electricians, etc., have completed their work, and the tile should have become bonded or "seated" before wet mopping, waxing, or moving any furniture or other equipment onto or over the floor.

Installations of AZROCK Tile should not be attempted unless the subfloors are in approved, acceptable condition. All tile should be stored in a warm room (75° F.) for at least 24 hours before they are installed and room temperatures in the spaces where the tile is being installed should be maintained at a like temperature for at least 24 hours previous to, during and after installation. Salamanders may be used wherever temperatures are too low, provided there is no fire hazard. All rooms where tile is to be installed should be well ventilated at all times so that any excess moisture in the air may be carried off both in winter and summer.

All subfloors shall be Dry, Clean, Smooth, and in acceptable condition before starting installation.

SUBFLOORS SUITABLE FOR AZROCK TILE

AZROCK Tile shall not be laid on subfloors except as recommended, and meeting the specifications which follow: Should a customer contracting for an installation of AZROCK Tile fail to provide a satisfactory subfloor as outlined, we recommend that the tile not be laid, as such an installation will prove unsatisfactory.

PROPER SELECTION OF TILE THICKNESS

AZROCK Carpet Tile is available in 1/8", 3/16", and 1/4" thicknesses, to meet various requirements.

1/8" thickness should be installed over concrete subfloors only and is not recommended where the floor will be subjected to unusually heavy traffic and abuse.

3/16" thickness is the usual standard, being suitable for installation over wood or concrete subfloors, and is recommended for all types of Public Buildings, Stores, Hospitals, Schools, etc.

1/4" thickness is for Heavy Duty and may be installed over wood or concrete subfloors wherever extra heavy traffic is found.

SUBFLOOR SPECIFICATIONS AND RECOMMENDED INSTALLATION PRACTICE

A. Specifications for Concrete Subfloors:

(1) New Subfloors:

New Concrete subfloors: Concrete subfloors where AZROCK Tile are to be installed shall be finished on new work with a 3/4" to 1" topping of one part portland cement and two parts clean, screened sand. This topping shall be screened to a level and true surface, then troweled with a steel trowel to an even, uniform surface at the level required, to be determined by the thickness of the AZROCK Tile to be used and the finished floor level. Lines or joints shall not be marked or scored into the finished surface of the cement mortar topping.

Prior to placing the cement mortar topping the concrete base shall be thoroughly roughened, wetted and brushed with cement grout, after which the application of topping shall be made.

Cement mortar topping shall be wetted for a period of not less than four days and then allowed to cure and dry. It shall be thoroughly dry before installations of AZROCK Tile, and concrete subfloor shall be turned over to the tile installation crew dry, clean, free from all foreign materials, etc. No concrete subfloor which has been frozen, or been

rained on prior to setting or with a soft, crumbly, or scaly surface or on which the cement mortar topping is not thoroughly bonded to the concrete slab will be accepted as satisfactory.

(2) Old Subfloors:

Old Concrete Subfloors: Old concrete floors may be satisfactory for AZROCK Tile installations or if not, can, in most cases, be made satisfactory at a moderate expense. Such floors must be cleaned of all paint, varnish, grease, or wax, and all uneven places levelled by chipping or filling in a satisfactory manner. All expansion joints, grooves, cracks, potholes, etc., shall be filled and the subfloor shall be uniformly smooth, level and solid before being accepted as satisfactory for a subfloor. Levelite, Floorstone, Savogran, or other approved mixtures for fill may be used in leveling old floors.

Old terrazzo or magnesite floors may be satisfactory as subfloors for AZROCK Tile installations, but must be treated as are old concrete floors and must meet the same conditions.

B. Recommended Installation Methods on Concrete Subfloors:

(1) Concrete Subfloors Above Grade or Suspended:

AZROCK Tile shall be installed with AZROCK Special Type X Tile Cement without any special treatment of the subfloor except at or near the seashore or in localities where there is an unusual humidity condition, in which case it is recommended that AZROCK Cut-Back Primer be well brushed into the pores of the concrete and allowed to dry thoroughly before spreading the AZROCK Type X Tile Cement. When using cut-back primer, be careful that there is plenty of ventilation and that burning cigarettes, cigars, or other flames are kept away from the primer. (1 gallon will cover 150-200 square feet).

(2) Concrete Subfloors at or Below Grade:

a. The concrete subfloor must be dry to the eye and thoroughly clean with all paint, grease, oil, wax, or other matter removed from the surface.

b. The subfloor shall be primed with AZROCK Cut-Back Primer, which shall be allowed to dry for at least eight hours to allow evaporation of solvent, before continuing installation.

c. Temperature of the room shall be at least 75° F. for 24 hours prior to starting installation and maintained throughout laying period and for 24 hours thereafter.

d. AZROCK Type X Tile Cement shall be spread over the entire area, and the tile shall be installed in the usual way.

C. Specifications for Wood Subfloors:

(1) General Remarks:

All wood subfloors should have proper ventilation underneath to prevent rotting, warping and cupping of boards. There should be 18 inches of air space between the ground and the wood subfloor and plenty of ventilators around outside walls to assure cross ventilation.

If the wood subfloor is laid over a concrete underfloor or other type of fill such as cinders, the underfloor or fill shall be thoroughly dry prior to laying of the wood subfloor, and ventilation underneath the subfloor should be provided when laid close to the ground.

It is also advisable, where possible, to paint the under surface of wood subfloors with an asphaltic coating to prevent the boards from becoming saturated with moisture.

All wood floors shall be free of paint, varnish, oil or wax before installing tile. Paint or varnish shall be removed by sanding or properly treating with paint or varnish remover.

Oiled floors shall be thoroughly sanded, cleaned and leveled, after which they shall be thoroughly scrubbed with a strong solution of tri-sodium phosphate in warm water and then thoroughly rinsed with clear water and the floor allowed to dry before installing tile.

Wax shall be removed by using an approved solvent such as turpentine, a varnish solvent, or a strong solution of tri-sodium phosphate. The wood shall then be washed and rinsed with lukewarm water, after which it shall dry thoroughly before installing tile.

(2) New Wood Subfloors:

All new wood subfloors over which AZROCK Tiles are to be installed shall be of double construction over joists at not to exceed 16-inch centers. The surface flooring shall be well seasoned, kiln dried T & G flooring of not over three inch face width, top nailed and toe nailed to a tight surface. All wood floors shall be sanded or scraped to a uniform smooth surface and no cupped or springy boards will be acceptable.

(3) Old Wood Subfloors:

Old wood subfloors should be inspected thoroughly, and if they meet the requirements of a new subfloor as to smoothness, tightness, springiness, etc., and have not been painted, oiled or varnished, they can be treated as a new subfloor.

If, however, the floor is rough, has cupped boards, loose or rotted boards, etc., it must be repaired. All rotten boards must be replaced and all loose ones tightened, and the entire floor sanded to a smooth even surface.

In some cases it is not possible to correct wood subfloors by the above methods, and they have to be leveled by using some leveling mixture.

D. Recommended Installation Methods on Wood Subfloors:

When wood subfloors are found satisfactory, free of paint, oil, grease, etc., and in accordance with the specifications for wood subfloors, AZROCK Tile may be installed by the following methods:

1. Over the wood shall be spread a thin layer of linoleum paste using a rubber edged spreader of standard type for such work.

2. AZROCK Subfloor Sheeting with the plain back side (without mineral dust) down shall be applied, being sure that the seams do not lap and that they do not butt closer than about 1/16 inch, after which the sheeting shall be rolled in two directions to assure complete adhesion and removal of airpockets.

3. After the sheeting has been thoroughly rolled AZROCK Type X Tile Cement shall be spread over the entire area with a notched trowel being sure that the joints between edges of the sheeting are filled, after which the tile is laid in the usual manner.

CLEANING, WAXING and MAINTENANCE

All AZROCK Tile installations shall be left clean, smooth, and in good condition, but no wet mopping, washing, or waxing should be attempted until all tiles have bonded or "seated" so as to adhere and conform to the subfloor. If water or wax should get under the tile before the tiles are seated, the cement bond will be destroyed, resulting in unnecessary cupping, breakage, and expense for replacement. Likewise, furniture and fixtures should not be moved onto or over the tiles until they are seated.

The time required for the tile to properly bond or "seat" is quite variable, depending upon temperature and humidity; however, it is recommended that the finished AZROCK Floor not be washed or waxed for at least one week, and preferably two weeks, as a matter of precaution.

AZROCK Tile, like other resilient types of floor coverings, should be protected from sharp point loads of furniture, fixtures, etc., by providing proper casters, glides, cups, etc.

Recommendations for proper care of AZROCK Floors are contained in the AZROCK Maintenance Folder, which should be given to the purchaser upon completion of every AZROCK installation.

UVALDE ROCK ASPHALT CO.

SAN ANTONIO, TEX.

UVALDE ROCK ASPHALT CO.

C-1

C-2

C-3

C-4

C-5

C-6

C-7

C-8

C-9

C-10

C-11

C-90

C-91

C-92

C-94
C-6

C-7
C-93

C-93

C-94

AZROCK
(TRADE MARK REG U.S. PAT. OFF.)
CARPET TILE

C-11
C-92

C-4
C-9

PLAIN COLORS

Countless color combinations and an infinite variety of floor designs are possible from this array of beautiful colors, whose pigments penetrate the full thickness of tile for permanence. Bright or subdued, grave or gay, an Azrock floor is always a thing of beauty.

C-91
C-90

C-6
C-7

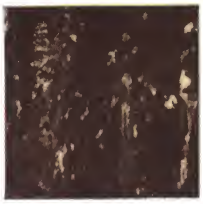
C-1
C-8

C-94
C-93

C-92
C-11

C-9
C-4

C-21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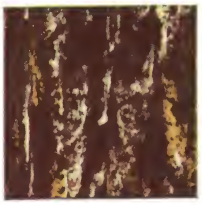
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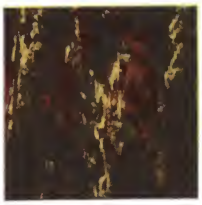
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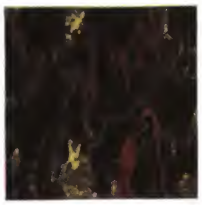
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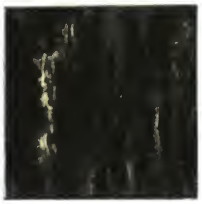
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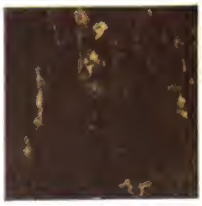
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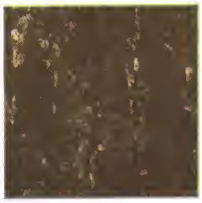
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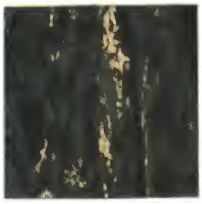
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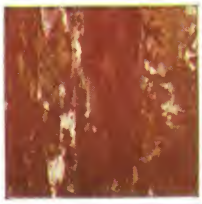
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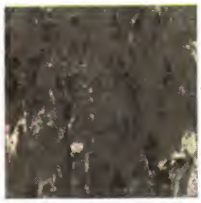
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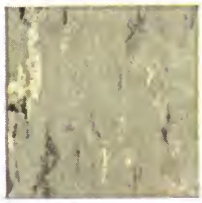
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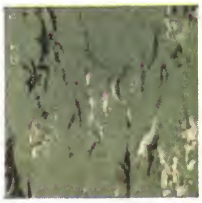
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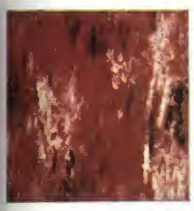
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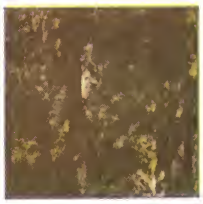
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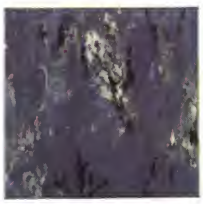
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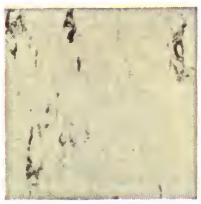
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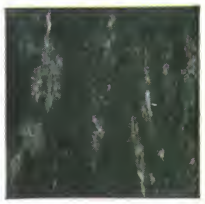
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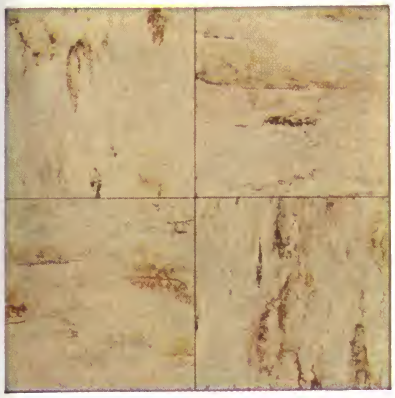
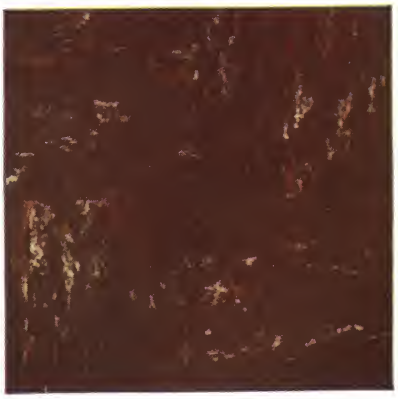

C-62
Field Pattern

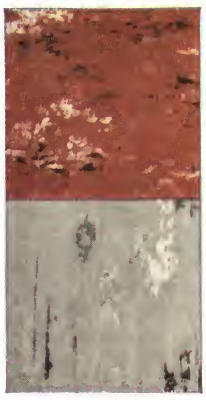
AZROCK
(TRADE MARK REG. U.S. PAT. OFF.)
CARPET TILE

MARBLEIZED COLORS

These extraordinarily beautiful tiles are reproduced here with exacting accuracy. Note how well they harmonize with each other as well as with the plain colors. Marbleized tiles do not show traffic marks as readily as plain colors.


C-33
Field Pattern

C-21
C-61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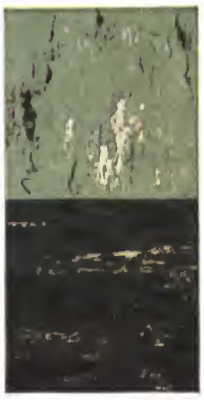
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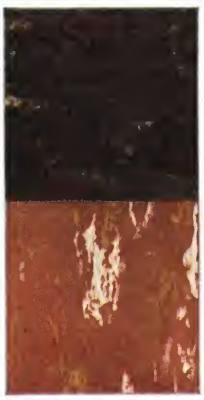
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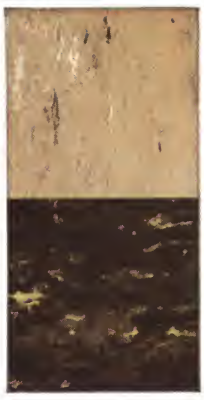
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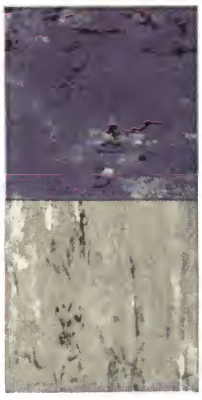
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C-61

AZROCK is

Architecturally interesting is the fact that Azrock Carpet Tile is suitable as the floor covering in a thousand-and-one diverse interiors. Azrock is equally at home in your client's office or in the kitchen of his home; in the staid dignity of a hospital or the scintillating gaiety of a cabaret; serving as a heavy duty floor covering in a busy store or enhancing the modernity of a sleekly smart home.

Actually, the reason for this ideal adaptability is simple: Azrock's characteristics have anticipated the specifications the modern architect demands for any of his floor coverings, whether they be for office, theater, store, home or public building. Azrock's resilience, for instance, is as important for reducing noise in a hard-working office as for maintaining quiet in a hospital's corridors. The fact that it is sanitary, smooth-surfaced, close-jointed, clean is as welcome to the home maker as to the store keeper. Its staunch durability has a universal appeal; so has the fact that it is fire-resistant and moisture-proof. And certainly, economy of first cost and of maintenance is a twin virtue received everywhere with acclaim.

"at home" on any interior floor

Additionally, the variety of beautiful colors available—bright or subdued, cheerful or staid—invite the formation of the very design you need to emphasize your architectural intent.

All Azrock colors are permanent, clear and penetrate through the entire thickness of each tile. They will not fade and the beauty of an Azrock floor is as lasting as this long-lived tile itself.

Different tile sizes aid the origination of unique and attractive floor patterns. Standard sizes are 6″x6″, 9″x9″, 12″x12″, 6″x12″, 9″x18″, 12″x24″, 18″x18″, 18″x24″, 6″x12″ hexagon, 12″ octagon and 12″ quarter-tile. Special sizes are 3″x3″, 4¼″x4¼″, 4½″x4½″, 3″x6″, 3″x9″, 3″x12″ and 3″x24″. Diagonal half-tiles are also available in 6″x6″, 9″x9″ and 12″x12″.

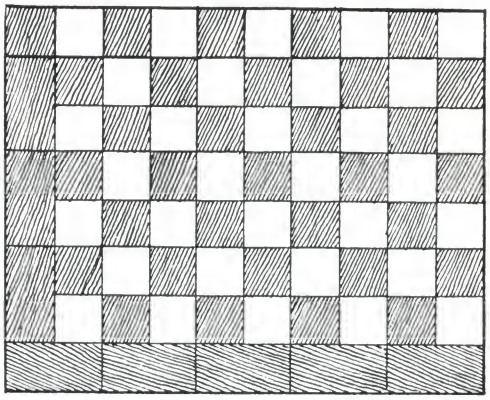
Harmonious variations of size and color, contrasts of strong and delicate tints, a blending of marbleized and plain effects . . . these are a few of the methods used to create original and outstandingly effective floor patterns in Azrock tile.

Azrock is the crowning achievement of one of the best known rock asphalt companies in the world, THE UVALDE ROCK ASPHALT CO. This company, exclusively in the asphalt business since 1912, is the oldest and largest producer of limestone rock asphalt in the United States. Azrock is produced in a modern up-to-date plant especially erected for the purpose. All Azrock is sold and installed by approved Azrock distributing contractors, located in the principal cities of the nation, who complete installations in accordance with Azrock specifications. For additional information direct inquiries to general offices:

UVALDE ROCK ASPHALT COMPANY

Frost Bank Building

San Antonio, Tex.



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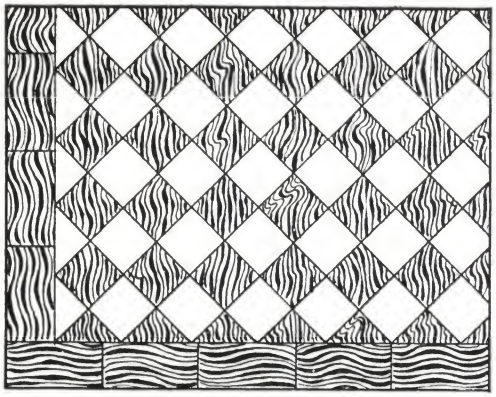

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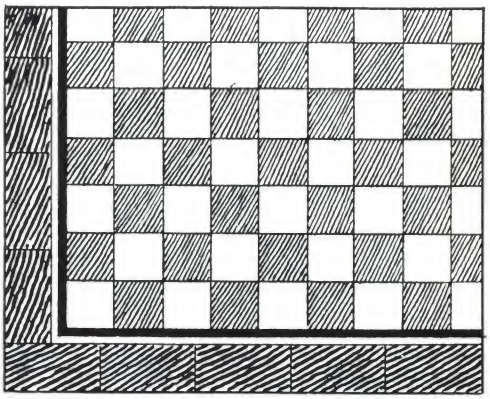
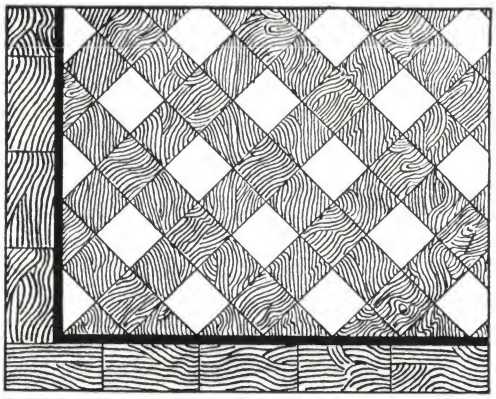


DESIGN-A3

PATTERNS

An important point in the selection of Azrock by the country's leading architects is its adaptability which enables this beautiful and colorful floor tile both to harmonize with and emphasize upon today's modern interior decorative treatment. Floor patterns which are designed for Azrock, using one or more colors or varying the tile sizes, are practically limitless in number and for any floor covering purpose.



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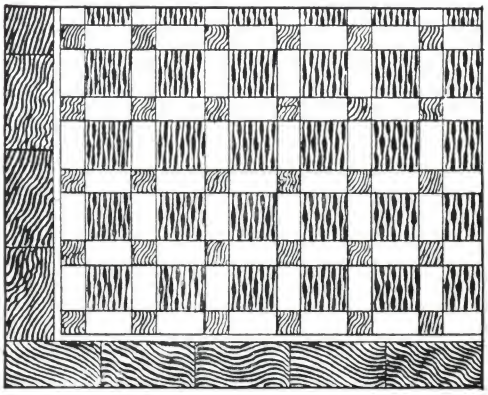

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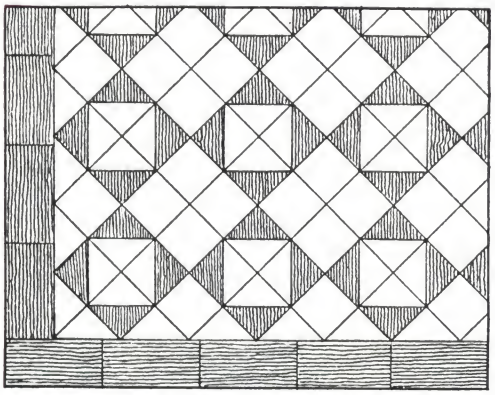

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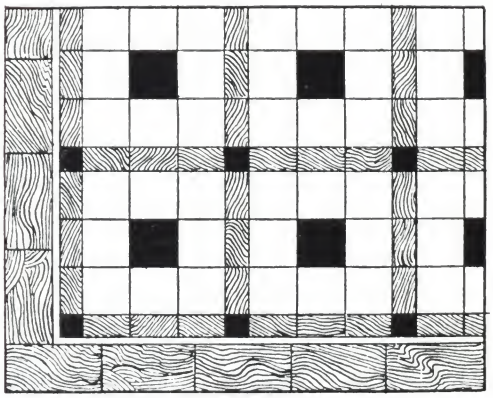

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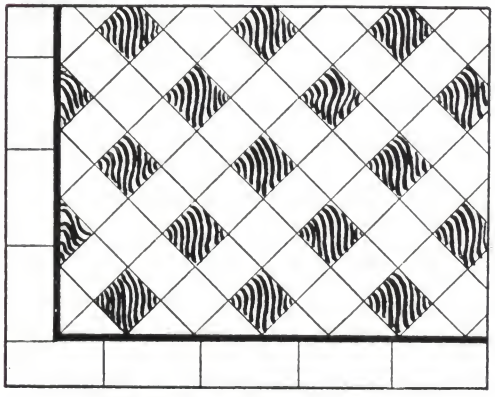

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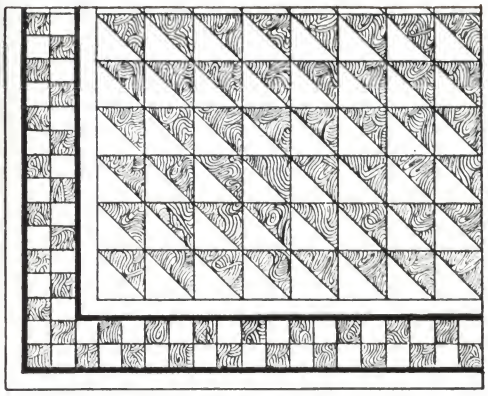

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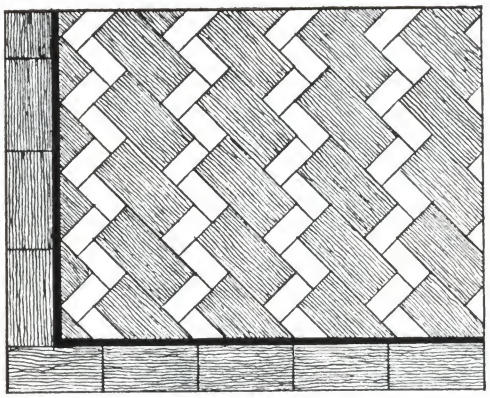

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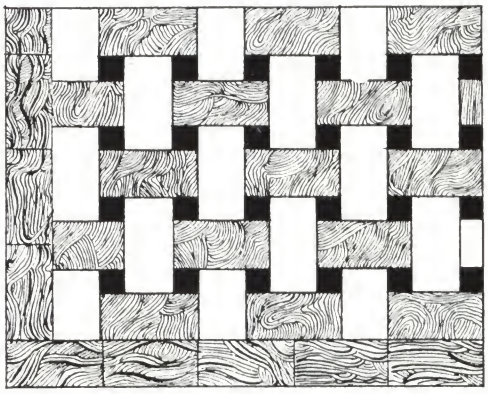
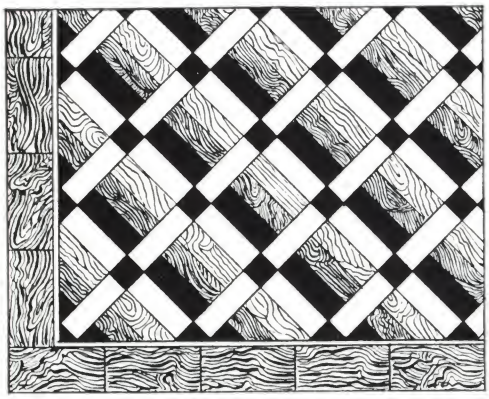


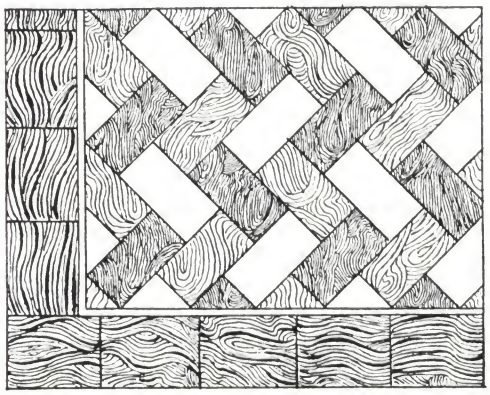
DESIGN-A11

PATTERNS

The myriad combinations that can be arranged harmoniously into interesting and beautiful floor patterns present fascinating possibilities. The few suggestions shown here barely enter the subject. By combining colors, mixing plain with marbleized tile, or varying the tile sizes . . . using all or any of these means! . . . practically any decorative motif can be carried out. Azrock is a spur to the creative artistry of every builder.



DESIGN-A12



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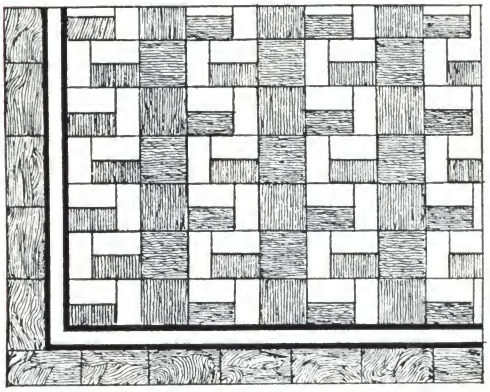

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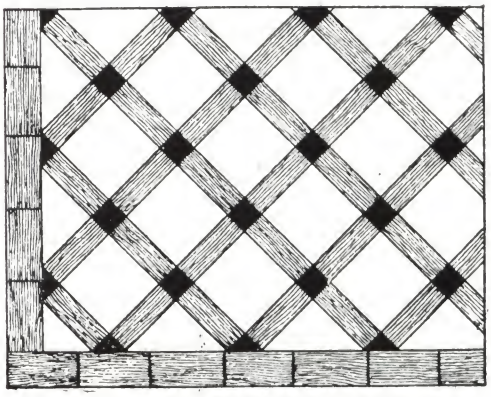

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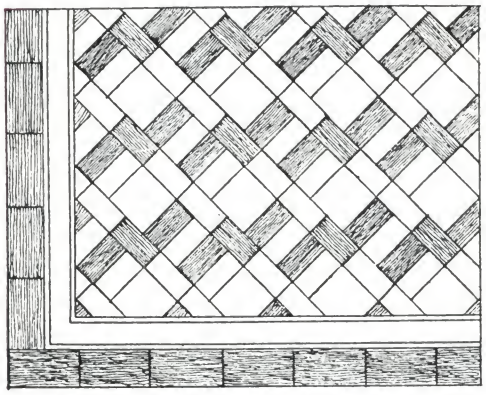

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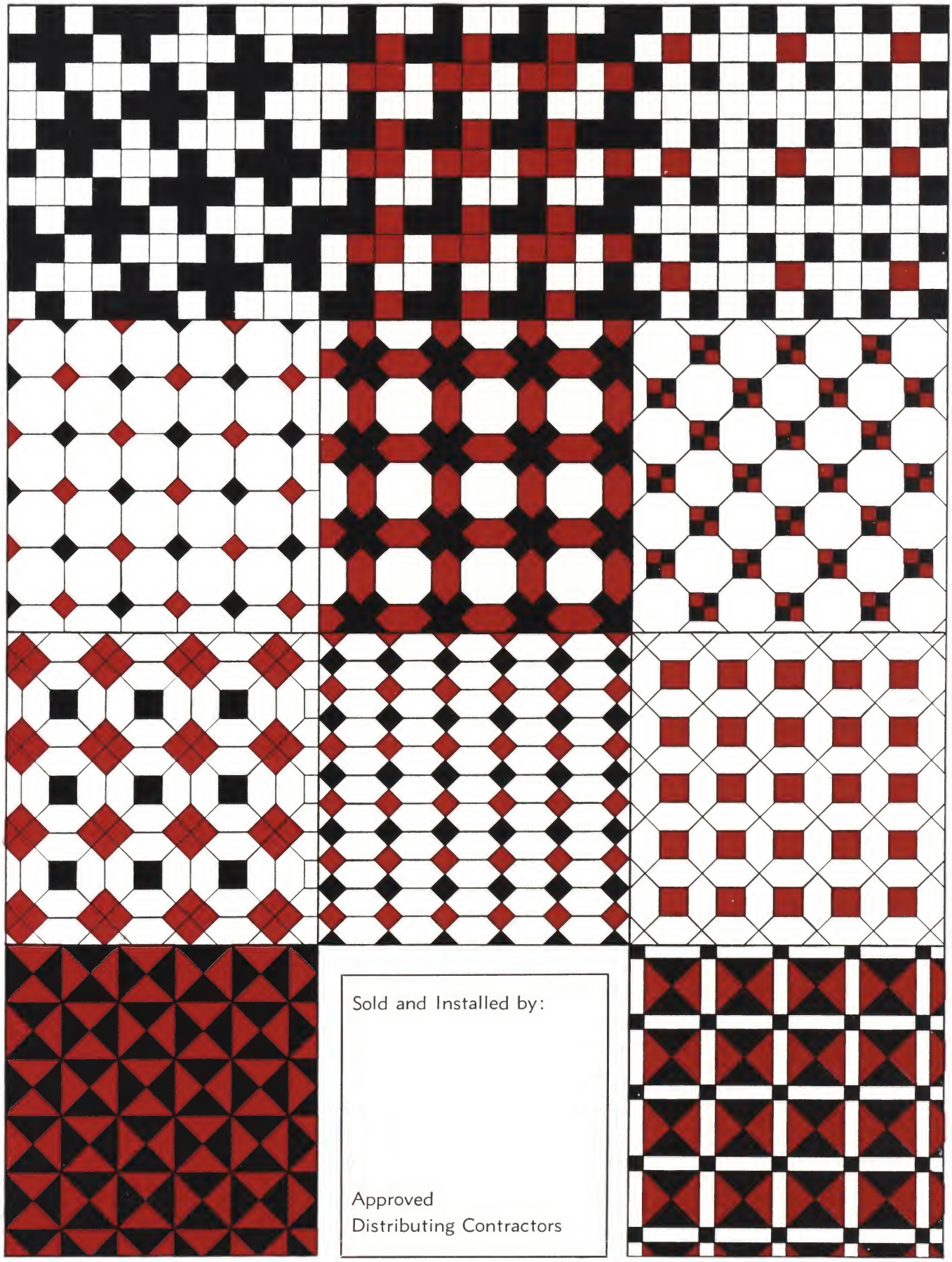


Sold and Installed by:

Approved
Distributing Contractors

SECTION 11

CONTINUED ⟶

THE AMERICAN TILE & RUBBER COMPANY

ASSOCIATE OF PURITAN RUBBER MANUFACTURING CO.

Manufacturers of Rubber Tile and Sheet Rubber Flooring, Rubber Mats, Stair Treads and Nosings

TRENTON, NEW JERSEY

A pioneer in the manufacture of rubber flooring, American Tile and Rubber Company has specialized in "rubber to walk on" for thirty years. It has been the exclusive maker of "Amtico" and "Trent" Rubber Floorings since these brands were created twenty years ago. Today American Tile and Rubber Company is recognized as one of the outstanding fabricators and designers in the rubber floor and wall covering field. As in the past, its products today have a sound homogenious construction — and are unweakened by any fabric insertion or fibrous filler.

The distribution of both "Amtico" and "Trent" is nation wide. Thoroughly reliable contractors, located in principle cities and known for the precision of their craftsmanship, insure correct installations.

Typical "Amtico" and "Trent" Installations

Charity Hospital, New Orleans, La.—*110,000 sq. ft.*
Social Security Building, Olympia, Wash.—*63,000 sq. ft.*
Brooklyn County Courthouse, Brooklyn, N. Y.—*88,000 sq. ft.*
Penn-Mutual Life Insurance Co., Phila., Pa.—*59,000 sq. ft.*
University of Ill., Med. & Dental Bldg., Chicago, Ill.—*30,000 sq. ft.*

"AMTICO" RUBBER TILE FLOORING

Marbleized and Plain

"Amtico" Rubber Tile Flooring offers the architect and building contractor many important advantages. For "Amtico"—in both marbleized and plain colors—combines a permanent richness of color and texture with a carpet-soft resiliency and an almost unbelievable year-after-year resistance to wear. The wide range of colors and textures opens to the architect new possibilities for strikingly individual floors. Each "Amtico" installation is "tailored" to blend with the style and feeling of the interior — whether home, school, commercial or public building, church, hospital, bar or store.

The success of "Amtico" Rubber Tile Flooring is due to its unique fabrication. It is made of pure virgin rubber—and built *dense* throughout its entire structure. Consequently "Amtico" withstands hard years of severe foot traffic—and still retains its freshness without any visible signs of age. It is likewise this dense structure that gives "Amtico" its unusual resiliency, prevents it from expanding, contracting, or becoming hard or brittle, keeps its surface impervious to dirt and moisture, always sanitary, always quiet. In short, "Amtico" is built a "quality" product in every respect — thoroughly practical, easy and inexpensive to maintain.

"Amtico" Marbleized textures and variegations are not ordinary — but possess colorings and effects decidedly their own, that blend admirably with any style architecture. These variegations, in full color array, have the soft richness and natural sheen of fine marble. Veritably, *"the beauty of marble with carpet comfort"*.

"Amtico" Plain Colors are brilliant and distinctive. They are fascinating whether used alone, with marbleized blends, or with specially designed inlays, borders or feature strips.

Although "Amtico" Rubber Tile is designed for the finest work, its cost is moderate. Sample portfolio on request.

Colors—"Amtico" Marbleized is made in 18 striking full-toned effects and in 18 softer two-toned blends. "Amtico" Plain is made in 16 popular colors. In addition, we are equipped to match colors or create special effects to architects' specifications.

Standard Gauges and Sizes—Four gauges: 1/8, 3/16, 1/4 and 3/8 inch. Six sizes: 4 x 4, 6 x 6, 6 x 12, 6 x 18, 9 x 9 and 12 x 12 inch. Special sizes to order.

"TRENT" SHEET RUBBER FLOORING

Marbleized and Plain

This modern Sheet Rubber Flooring plays a *dual* role; not only does "Trent" retain its marble-like freshness under years of severe traffic—but, due to its ingenious fabrication, it is surprisingly moderate in cost. Because it is made by the roll and laid in lengths, its installation expense is reduced appreciably. The final cost of "Trent" is, therefore, decidedly reasonable.

"Trent" Sheet Flooring gives all the features of "Amtico" Tile Flooring — the same richly textured marbleized and "decorator" colors, the same carpet-soft resiliency, the same resistance to the tread of tramping feet, the same non-slip advantage.

It is likewise built *dense* throughout its entire structure. In addition, "Trent" has a fabric backing—necessitated only by the manufacturing process. This backing assures tighter adhesion and tends to make imperfections in underfloor less noticeable.

Consequently "Trent", in both Marbleized and Plain colors, is widely specified for both new and old buildings — homes, offices, schools, hospitals, banks — in truth, wherever an "alive" appearance and reduced cost are important factors. It is further enhanced by border strips and inserts; easily cut and inserted. Handy sample portfolio on request.

Colors—"Trent" Marbleized is offered in 12 variegations; "Trent" Plain in 10 interesting colors.

Standard Gauges and Sizes—In two gauges: 1/8 and 3/16 inch. In rolls 36 inch wide; approximately 25 yards to the roll.

The Checker-board Effect in "Amtico" Rubber Tile

The Basket Weave Effect in "Amtico" Rubber Tile

A splendid example of "Trent" Marbleized Rubber Flooring — designed to follow-through the architectural treatment and colorful atmosphere of this interesting interior.

•

Cocktail room in Carl's Restaurant, Los Angeles, Cal.

•

Aetna Carpet Co., Los Angeles, Cal., contractors.

•

Honey Bun Herely, Los Angeles, decorator.

•

AMERICAN TILE AND RUBBER COMPANY

"AMTICO" GRANITE-TYPE RUBBER TILE FLOORING

The Beauty of Granite or Terrazzo . . . the Resiliency, the Noislessness of Rubber

This unique development in *resilient* flooring gives a perfect simulation of granite or terrazzo flooring—*plus all the advantages of rubber flooring.*

As shown in the accompanying illustrations—taken in color photography and unretouched—"Amtico" Granite-Type has all the characteristic colorings and textures of granite or terrazzo and is readily fashioned into typical terrazzo patterns. Yet it has the soft under-foot resiliency and quiet comfort of live rubber, and rubber's lighter weight, freedom from unsightly cracking, and its important non-slip advantage. Only "Amtico" gives this "granite" floor . . . *in rubber.*

Architects and building contractors are finding "Amtico" Granite-Type Rubber Flooring a truly versatile floor covering. For wherever the aristocratic richness of marble or terrazzo is favored — churches, courtrooms, museums, office buildings — this modern rubber tile is proving its remarkable adaptibility.

Here are two typical installations of "Amtico" Granite-Type Rubber Flooring:

The one above demonstrates how easily this "stone" floor blends with its surroundings . . . how readily it becomes part of the interior. Providence (R. I.) Journal Building; Crocker Co., Providence, contractors.

At the right is the Chicago ticket office of the Southern Pacific lines —beautifully floored with "Amtico" Granite-Type Tiles in a rich combination of colors. Turner Resilient Floors, Inc., Chicago, contractors.

"Amtico" Granite-type Rubber Flooring is Easily Installed in New or Old Buildings

For new buildings, "Amtico" Granite-Type is superb. With its striking color effects, its typical granite or terrazzo patterns, it is decidedly in step with present trends in decoration—especially the popular modern classic.

In remodelling present structures "Amtico" Granite-Type is equally effective. It forms a colorful setting for the "older" decorative styles. Its wealth of texture and its smart color combinations give new life to otherwise dull interiors. It gives a quick transition to a "stone" floor —without the usual muss, inconvenience and extra expense.

"Amtico" Granite-Type Tile is built *dense* throughout its entire structure—like "Amtico" Marbleized Tile. Consequently, it has the same carpet-like shock resistance, the same sanitary, noiseless, easy-to-maintain features. It likewise remains fresh, unchanged under the tread of millions of tramping feet.

"Amtico" Granite-Type Tile is unconditionally guaranteed against disintegration or any change in its character. Floors laid over ten years ago still retain their original sparkle—even under severe foot traffic.

Colors—Made in the six standard combinations pictured at the right. However, when desired, we will create special effects to architects' specifications or ideas.

Standard Gauges and Sizes—Two gauges: 3/16 and 1/4 inch. Five sizes: 4 x 4, 6 x 6, 8 x 8, 12 x 12 and 24 x 14 inch.

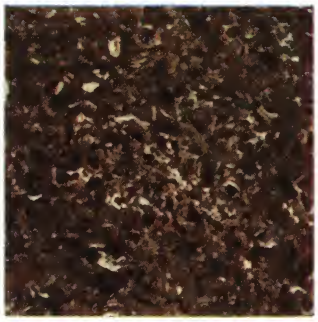
The two patterns below are interesting examples of the versatility of "Amtico" Granite-Type Flooring. For this flooring can be fashioned into any terrazzo design without disturbance. It gives the architect new opportunities to create unusual floors . . . *in rubber.*

The Popular Chevron Pattern . . . from Standard Sizes

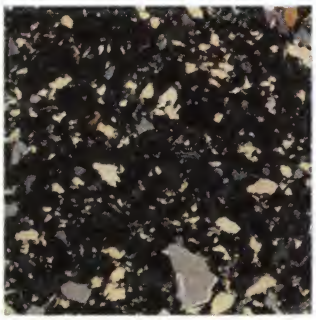
The "Pyramid" Design . . . Created with Standard Units

Note how easily "Amtico" Granite-Type Tile takes its place in the dignified setting above—how dramatically it accentuates the appointments. The floor combines Venice (No. 14) and Barre (No. 10) in an interesting pattern. The altar steps are "Trent" Marbleized Rubber Flooring. St. Bernard's Church, Rockville, Conn.; Crooker Co., Providence, R. I., contractors.

No. 15: Tyronne



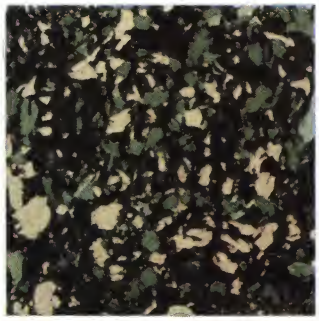
No. 10: Barre



No. 16: Abyss

No. 1: Milan

No. 14: Venice



No. 12: Truro

"TRENT" RUBBER WALL COVERING • Marbleized

"Trent" Wall Covering is beautiful as well as practical. For this new creation in rubber wall covering not only remains permanently attractive, waterproof, and sanitary—but it offers the architect and building contractor new opportunity to create distinctly modern walls at *comparatively reasonable cost.*

"Trent" Wall Covering has the rich marble colorings and natural sheen characteristic of "Amtico" and "Trent" Floorings. It is easy to apply, easy to clean, never chips or cracks, never needs replacing or refinishing. And its cost is surprisingly moderate. Samples on request.

Colors—Eighteen fascinating color blends especially suited to residences, apartments, institutions, banks, offices, shops, restaurants, taverns and many other locations.

Standard Gauges and Sizes—One gauge: 1/16 inch. In rolls 36 inches wide; approximately 25 yards to the roll.

"PURITAN" RUBBER MATS AND MATTING

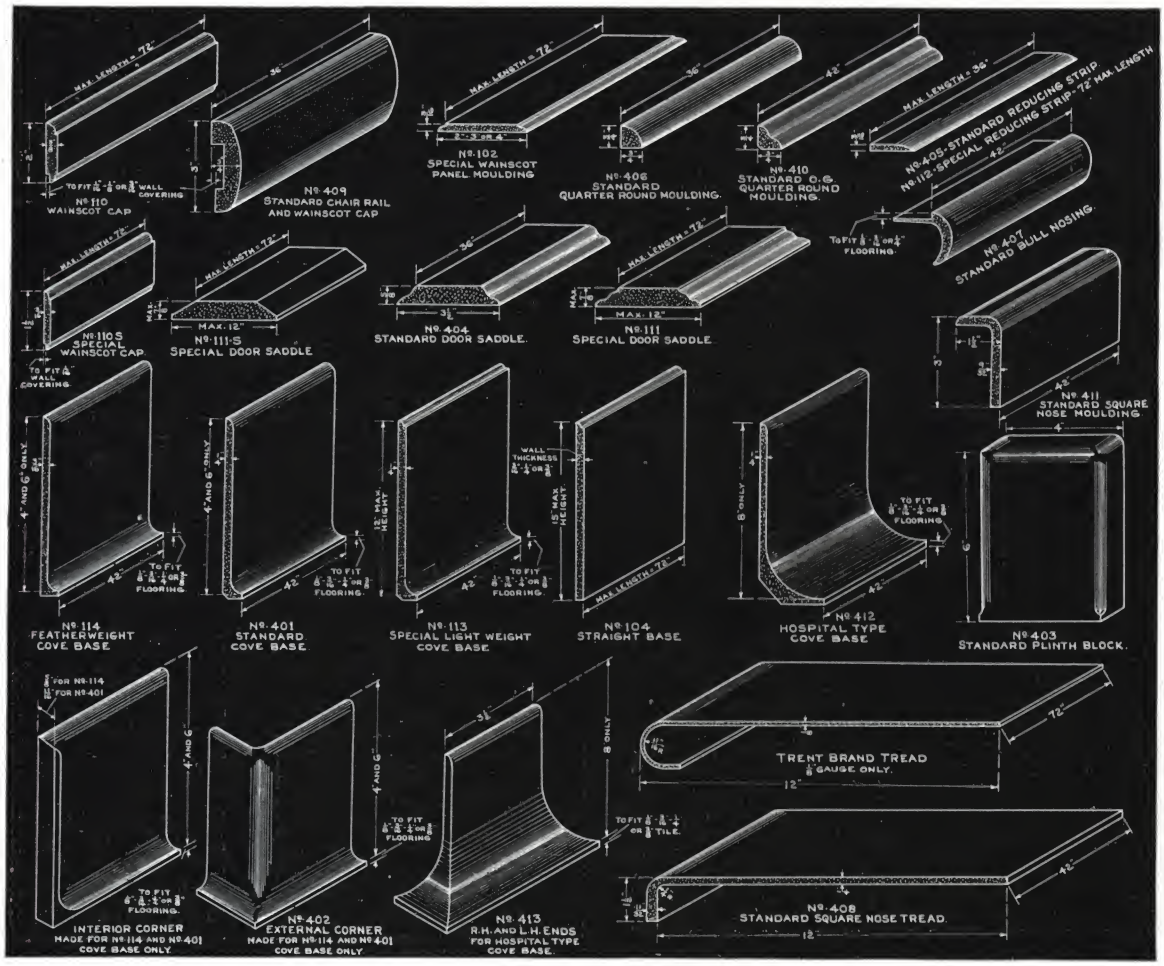
"Puritan" Mats are specifically designed for individual requirements. Each can be planned to harmonize with the architectural treatment of the theatre or hotel lobby, store entrance, elevator cab or other place where it is used either permanently or during inclement weather. These "Puritan" Mats can be made practically any shape and in one piece up to 8½ by 15 feet. (We recommend, however, that large mats be made in sections to facilitate easy handling.) A wide selection of colors is available in several thicknesses.

In these mats can be inserted firm names, trademarks, initials or street addresses.

"PURITAN" STAIR TREADS, RISERS, NOSINGS

"Puritan" Treads and Risers are supplied in many types—in both plain and marbleized colors.

ACCESSORIES • For Marbleized Rubber Flooring



SPECIFICATIONS

Materials

Shall be "Amtico" Rubber Tile Flooring or "Trent" Rubber Sheet Flooring as manufactured by the American Tile and Rubber Co., shall be of homogeneous construction throughout, and shall be (Marbleized) (Granite-Type) or (Plain) and laid according to the schedule and designs shown in these specifications. Thickness of this rubber flooring shall be (⅛ inch) (3/16 inch) (¼ inch) or (⅜ inch).

Where rubber flooring of mottled pattern is called for, the mottled pattern shall run entirely through the flooring and shall be clear and distinct. Variations in color and mottling shall not be so wide so as to mar the decorative value of the floor. The flooring shall have a uniform thickness throughout. There shall be no fabric insertion or fibrous content in the rubber flooring. All tile shall be factory cut on all sides to a true edge by the American Tile and Rubber Company.

All cement used shall be as recommended by the American Tile and Rubber Company.

Typical samples of each kind and color of flooring as specified, shall be submitted in duplicate to the architects for approval and selection. The Rubber Flooring Contractor shall furnish the "Standard Guarantee on Rubber Flooring" adapted by the Rubber Flooring Manufacturers Division of the Rubber Manufacturers Association, Inc.

Foundations

Wood Sub-floors—

1. If wood floor is old, replace worn and/or decayed boards with new tongue and grooved lumber, then sand entire floor to a uniform level.

2. All loose or springy boards should be surface nailed and made secure.

3. If wood floor is new, the underflooring laid over rough flooring shall not be less than ¾-in. tongue and groove kiln dried hardwood or pine flooring not more than 3-in. wide, blind and surface nailed and very secure.

4. Apply 1¾ pound (1¾ pound weight per square yard) or thirty pound (2.7 pound weight per square yard) asphalt saturated felt or felt paper with very thin coat of linoleum paste, evenly spread to get complete bond.

5. Felt should be cut to room size and fitted snugly to baseboards, jambs, etc.; should fit close at seams; should *not* overlap and should run in opposite direction of underfloor.

6. Roll felt with iron roller until it is perfectly smooth and all air bubbles or pockets are eliminated.

7. Rubber tile is then installed directly over felt paper, using rubber tile cement.

Note: The use of burlap is not necessary.

Concrete Sub-floors—

1. Be sure floor is dry and seasoned.

2. Whenever possible insist on a steel troweled concrete floor rather than a float finish. All joints, grooves and uneven places should be filled with plaster of paris or crack filler.

3. Test for *dampness* by sprinkling a small amount of calcium chloride on the floor and cover with a watch crystal, sealing the edge with melted paraffin, or the drippings from a lighted candle. In four hours or so examine the chemical for indications of moisture. If dampness is present, the calcium chloride will have dissolved. To detect deep seated moisture, drill hole in floor through top finish to underfill and put in several granules of calcium chloride.

Rubber tile is installed direct on concrete using rubber tile cement.

Applying Tile and Cove Base

1. Start with cove base, (if used).

(a) Begin in a corner with an *Inside* Angle or a mitered joint and continue around room fitting each piece so every joint will be true and tight.

(b) Fasten base to the wall or the wood ground by the use of a thin coat of Rubber Tile Cement spread on the back of the base and corresponding area on wall.

(c) Use a headless brad every foot or two in order to hold the base in place while the cement is setting, or wood strips may be braced against base if brads are objectionable.

2. Cutting and Applying Border.

(a) Determine border measurements from either the blue print or by considering the number of pieces of tile to be used each way of room.

(b) Scribe border stock to wall or cove base to fit snugly.

(c) Edges must be cut straight and true and not beveled—if not, tile may raise where coming in contact with beveled edges.

(d) The irregularity of the room is taken care of in the edge next to the base, *but always great care* must be used so that the inside edges of adjoining borders are absolutely square with one another in order that the tile will fit properly.

(e) Fit two long adjoining borders first, then after the field of tile is laid—the remaining area can be fitted with its border.

3. Cementing Border and Field Tile.

(a) Cement border in place along two adjoining walls by spreading a thin coat of Rubber Tile Cement under border and sliding border up tight against wall to bring cement up into joint.

(b) Use a gallon of cement to each sixty (60) or seventy (70) feet of square foot of tile or border.

(c) Trowel cement evenly in area of not more than nine (9) or ten (10) square feet. This will enable the setting of tile in cement before it sets or glazes over.

(d) Place each piece of tile close to the next piece of tile or border and push snugly into place with very little pressure.

(e) Remove surplus cement with cloth or waste dampened with alcohol.

(f) Roll each area in each direction within half hour after the area is completed, for at least ten or fifteen minutes so as to force individual pieces of tile into the cement, removing all entrapped air and insuring even distribution of cement.

Applying Sheet Rubber Flooring

The methods used in installing Sheet Rubber Flooring are exactly the same as those employed in making a first class linoleum installation. Use bonding agent approved by the manufacturer, cut the seams in the same manner as for linoleum and otherwise follow the procedure already established in good linoleum practice.

In addition we recommend:

1. All seams should be double cut.

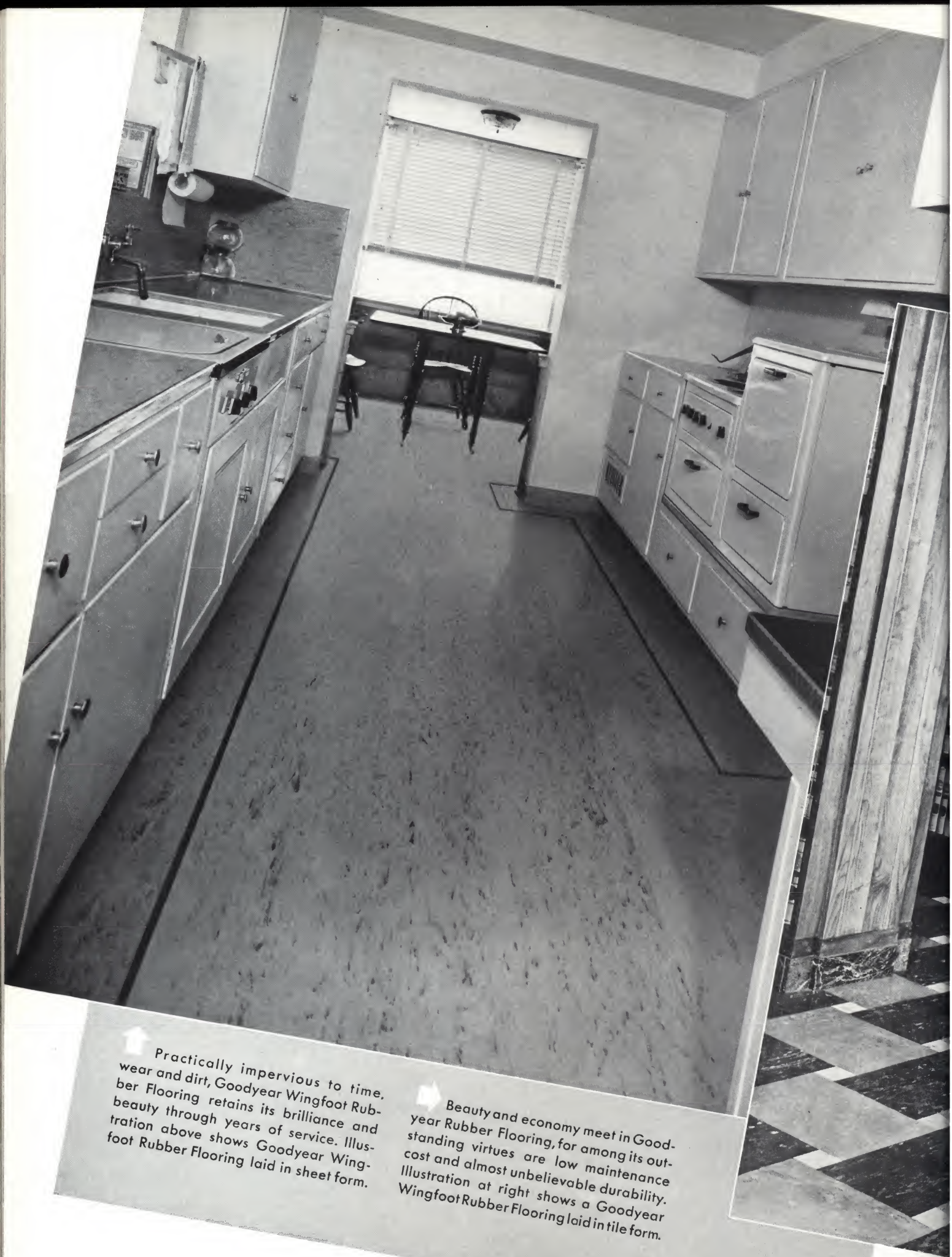
2. Bonding agent should be spread very thin—about 175 sq. ft. to the gallon. This is necessary because neither rubber flooring nor asphalt saturated felt absorb any of the cement or paste. Excessive cement or paste will lump under the rubber.

3. In rolling the floor after it has been cemented, first roll the long way of the strip. Start rolling from the center of each strip, working slowly out to the seam. This eliminates any danger of trapped air.

4. Waterproof cement should be used at the points where sheet rubber flooring goes around water pipes where there is apt to be considerable moisture.

MEMORANDA

THE GREATEST NAME IN RUBBER
GOODYEAR
WINGFOOT RUBBER FLOORING AND WALL RUBBER



Practically impervious to time, wear and dirt, Goodyear Wingfoot Rubber Flooring retains its brilliance and beauty through years of service. Illustration above shows Goodyear Wingfoot Rubber Flooring laid in sheet form.

Beauty and economy meet in Goodyear Rubber Flooring, for among its outstanding virtues are low maintenance cost and almost unbelievable durability. Illustration at right shows a Goodyear Wingfoot Rubber Flooring laid in tile form.

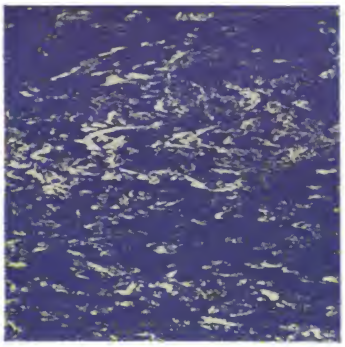
THERE IS NO LIMIT TO THE POSSIBILITIES OF

GOODYEAR WINGFOOT

RUBBER FLOORING AND WALL RUBBER

It is suitable for public buildings, private homes, general offices, banks, hospitals, churches, schools and colleges, stores, clubs, hotels and bars, ships, radio studios.

100 Plain Dark Blue

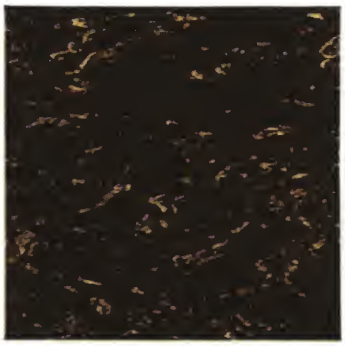


108 Blue-White

201 Two-tone Dark Blue Green

203 Light Blue Green-Black

500 Three-tone Gray

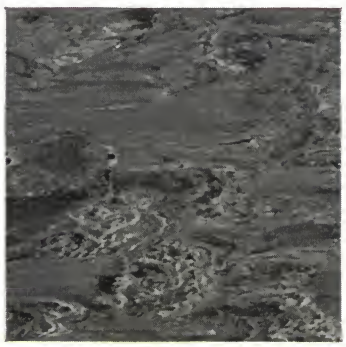


423 Black-Red-Gold

422 Black-Green-White (Verde Antique)

418 Two-tone Light Gray-Green

503 Plain Light French Gray



504 Light French Gray-Black

603 Medium Jade Green-Gray

611 Three-tone Light, Medium, Dark Cream

815 Cream-Light Brown-Dark Brown

810 Cream-Pink-Brown

806 Cream-Gold-Red-Black

800 Plain Dark Cream

GOODYEAR Wingfoot Rubber Flooring, in sheet or tile form, is available in a wide range of plain and variegated colors with borders and feature strips which make possible the creation of an unlimited number of designs.

902 Plain White

903 White-Black

Note: These colors are available in Rubber Floorin

205 Two-tone Pastel Blue Green

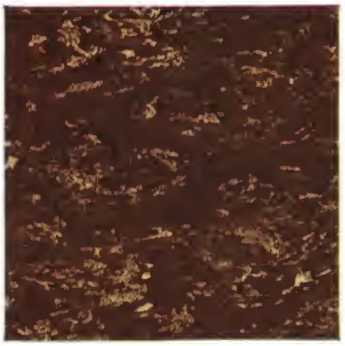
314 Dark Red-Black-Gold

318 Light Red-Gray

320 Bright Red-Cream

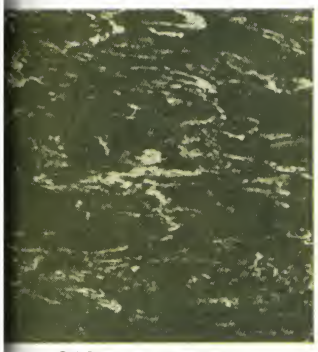
402 Black-White

400 Plain Black



322 Maroon-Gold-Black

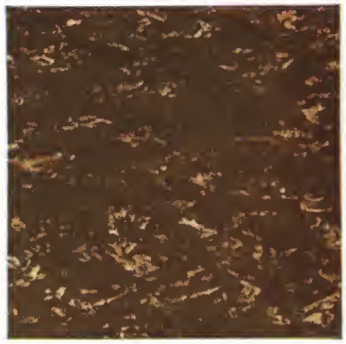
321 Plain Bright Red



613 Green-White

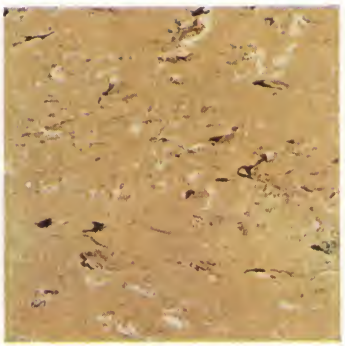
700 Two-tone Dark Brown

701 Two-tone Dark Brown-Cream



703 Medium Brown-Yellow-Cream

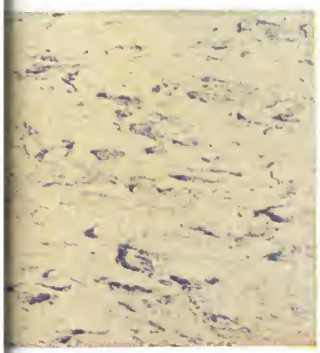
719 Plain Dark Brown



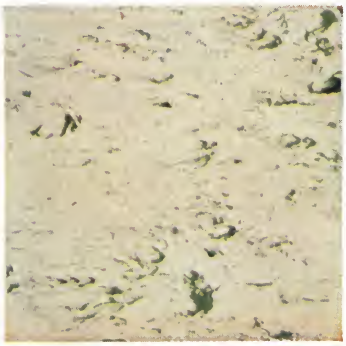
718 Yellow-Chocolate-White

717 Three-tone Light Brown

704 Plain Light Brown



904 White-Blue



905 White-Black-Green

BECAUSE it comes in continuous rolls and its cost is more moderate, thousands of feet of Goodyear Wingfoot Sheet Rubber Flooring are being installed in new and remodeled buildings with large floor areas.

nly. For wall rubber colors see next page.

109 W

205 W

208 W

323 W

614 W

408 W

400 W

324 W

615 W

700 W

720 W

721 W

906 W

817 W

816 W

800 W

GOODYEAR WINGFOOT WALL RUBBER

Used in harmonious treatment with Goodyear Wingfoot Rubber Flooring —Wingfoot Wall Rubber gives modern style, lasting beauty and permanent cleanliness to this modern bathroom. Figures on wall are hand cut.

The same prized advantages of Goodyear Wingfoot Rubber Flooring are present in Goodyear Wingfoot Wall Rubber for walls, wainscotings and original mural decorations.

GOODYEAR WINGFOOT WALL RUBBER

GOODYEAR WINGFOOT RUBBER

SPECIFICATIONS

MANUFACTURER'S STANDARD GUARANTY ON RUBBER FLOORING AND WALL RUBBER

"We guarantee our product against defects provided our recommended maintenance instructions are followed and we will repair or replace any such defective product which is brought to our attention, in writing, within one year after date of completion of installation.

"We do not accept responsibility for any damages arising from defects or dampness in sub-floors or other surfaces which may occur after completion of installation."

Goodyear Wingfoot Flooring

(Made in ⅛", 3/16" and ¼" Gauge)

Furnished in full rolls 25 to 35 yards long by 1 yard wide.

Goodyear Rubber Tile

(Made in ⅛", 3/16", ¼" and ⅜" Gauge)

Standard Sizes

(Furnished with square edges only)

4" x 4"	9" x 9"	6" x 12"
6" x 6"	12" x 12"	9" x 18"

Right and left diagonal halves of these sizes. Also any unit larger than 4 ins. in either width or length or both that can be cut without waste from 36" x 36" or 36" x 48" slabs.

Border Material and Strips

(Made in ⅛", 3/16" and ¼" Gauge)

Furnished in 1", 1½", 3", 6", 9" and 12" widths.

Specifications for Sub-floors

"All concrete underfloors to receive rubber floor, shall be finished true and even and free from high and low spots, ⅛, 3/16, ¼ or ⅜ in. below the required finished floor level — depending on the thickness of the rubber flooring.

"Concrete shall be thoroughly dry and clean, and free from cracks and surface defects.

"Goodyear rubber floor shall be installed direct to concrete underfloors."

(Note: No Goodyear rubber floor should be installed on concrete floors below grade or at grade—unless there is a sufficiently ventilated air space below the concrete slab to prevent the condensation of moisture on the under surface of the concrete.)

"Good quality 30-pound bituminuous asphalt saturated all-rag felt shall be cemented to wood underfloors with good quality paste, before installation of rubber floors.

"All materials included in this specification shall be approved by THE GOODYEAR TIRE & RUBBER COMPANY, INC."

Specifications for the Installation of GOODYEAR WINGFOOT RUBBER FLOORS and GOODYEAR RUBBER TILE FLOORS

"All rubber floors to be furnished and installed under these specifications shall be manufactured by THE GOODYEAR TIRE & RUBBER COMPANY, INC.

"All coloring matter shall be of the highest quality. All pigments used shall be insoluble in water. All rubber flooring to be furnished shall be compounded and cured to a sufficient density to preclude the possibility of the floor creeping under traffic.

"As an extra precaution against the floor creeping or stretching under severe traffic a woven cotton fabric shall be properly vulcanized in the rubber flooring approximately 3/64 in. from the bottom surface.

"All rubber floors to be furnished to a tolerance in thickness not over .005 of an inch, plus or minus. The exposed surface of the rubber floor shall have a smooth plate finish.

"Rubber floors to be installed in a neat, workmanlike manner by mechanics experienced in the laying of rubber flooring.

"Rubber floors to be installed in an adhesive of finest quality, approved by the rubber flooring manufacturer.

"After floors have been installed and before the adhesive has thoroughly set, the surface of the rubber shall be rolled both ways with special rollers, and all excess cement on surface of rubber floors or along joints shall be removed and the surface thoroughly cleaned.

"At points where rubber floors terminate against other types of flooring, brass or bronze separating strips shall be used.

"All rubber flooring shall carry the standard guarantee as outlined by the Rubber Flooring Division of the Rubber Manufacturers Association, Inc.

"The rubber flooring contractor will submit to the architect a typical sample of the material he proposes using and the material shall conform in all respects to that specified herein."

★ ★ ★

GOODYEAR WINGFOOT WALL RUBBER

(Made in 1/16" Gauge)

Furnished in full rolls 25 to 35 yards long by 1 yard wide, and in strips 1", 1½", 3", 6", 9" and 12" wide.

Specification for Side-Walls.

NEW WALLS

Walls to receive GOODYEAR WINGFOOT WALL RUBBER should be a good quality plaster with a well bonded white coat finish. When dry the plaster should be smooth and firm. Any rough spots or trowel marks should be removed with sandpaper.

OLD WALLS

Any loose paint, wall paper or cold water paint, should be removed from old walls. Old walls should be free from grease and dirt, or other substances that might prevent a perfect bond.

Any loose plaster should be removed and replaced. Holes and cracks should be filled. Any high spots on the old plaster walls should be removed by sanding.

WALL BOARDS

Hard-pressed construction wall boards with a smooth outer surface or plywood, when properly erected, provide a satisfactory backing for WINGFOOT WALL RUBBER.

Specifications for the Installation of Wingfoot Wall Rubber

All wall rubber to be furnished and installed under these specifications shall be manufactured by The GOODYEAR TIRE & RUBBER COMPANY, INC.

All coloring matter shall be of the highest quality. All pigments used shall be insoluble in water.

Wall Rubber shall be approximately 1/16" in thickness and shall have a fabric backing.

Material shall be installed with an adhesive approved by the manufacturer.

All seams shall be double-cut. Where rounded corners are specified, seams shall be at least six inches away from any corner.

After application of the Wall Rubber, the material shall be thoroughly rolled, starting at the center of each strip and working toward the edges to eliminate all air pockets.

FLOORING AND WALL RUBBER

ACCESSORIES

★ GOODYEAR RUBBER FLOORING ACCESSORIES ★

COVE BASE

(Furnished in 32 in. lengths only)

Height Above Finished Floor	Wall Gauge	Toe Gauge
2"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
3"	only 3/8"	3/16" 1/4" 3/8"
4"	3/16" 1/4" 3/8"	3/16" 1/4"
5"	3/16" only	3/16" 1/4" 3/8"
6"	3/16" 1/4" 3/8"	1/8" 3/16" 1/4"
6"	1/8" only	

INSIDE AND OUTSIDE CORNERS

Height Above Finished Floor	Wall Gauge	Toe Gauge
4"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
4" Hospital	3/16" 1/4" 3/8"	3/16" 1/4"
6"	3/16" 1/4" 3/8"	3/16" 1/4" 3/8"
6"	1/8" only	1/8" 3/16" 1/4"

FEATHER EDGE COVE

Overall Height	Wall Gauge
1½"	1/8"

PLINTHS

(Maximum length 30 in.)

	Widths	Thickness
Plain Plinths	4¾", 5¼", 5⅜", 5½", 5¾", 6"	⅞"
Offset Plinths	(4⅛")	

WAINSCOT CAPS

	Width	Gauge	Length
Plain	2½"	1/4"	32"
*Slotted	3"	7/16"	32"

*Slotted for 3/16 in. wainscot.

THRESHOLD OR DOOR SADDLES

Total width 5 in.—For use with either 3/16 in., ¼ in. or ⅜ in. floor.
Total rise above finished floor, ⅛ in.
Maximum length, 44 in.

EXTERNAL WAINSCOT CORNERS

3/16 in. gauge only—32 in. high.
Right angle with 1½ in. width on each side.

LONG STAIR TREAD

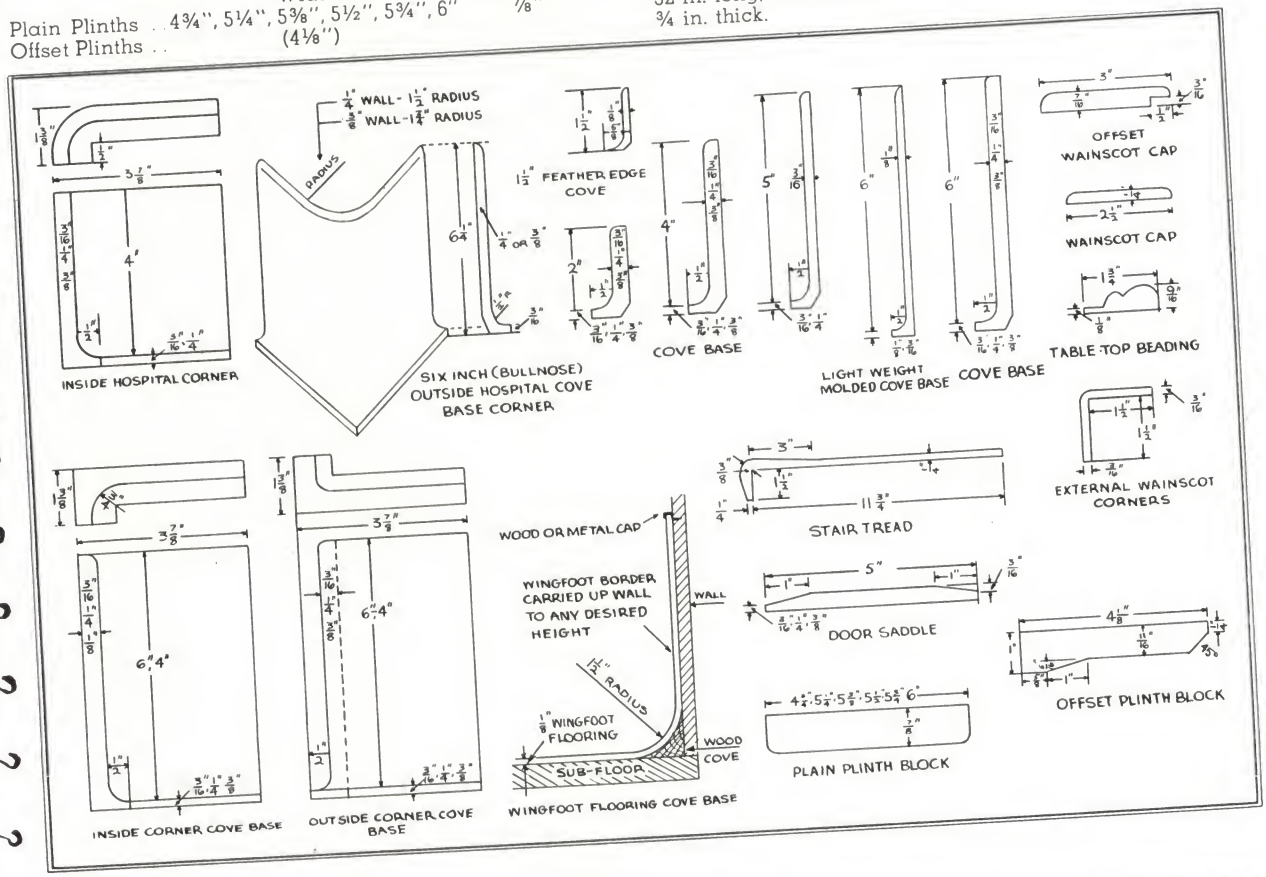
¼ in. gauge only—any length up to and including 7 ft.
—11¾ in. wide, 1½ in. nosing.

RISER FOR LONG TREAD

¼ in. gauge only—any length up to and including 7 ft.
—11¾ in. wide, 1½ in. nosing.

TABLE TOP BEADING

32 in. long, 1½ in. wide—Round Beading.
¾ in. thick.



GOODYEAR WINGFOOT RUBBER FLOORING AND WALL RUBBER

For floors and walls of long endurance and lasting beauty — in private homes, public and commercial buildings.

THE GOODYEAR TIRE & RUBBER COMPANY, Inc.

AKRON, OHIO AND
LOS ANGELES, CALIFORNIA

HOOD RUBBER COMPANY, INC.

Manufacturers of Hood Rubber Floor Tiling

WATERTOWN, MASS.

RUBBER FLOOR TILING

Special Hood processes produce rubber tile of unusually great density, resulting in—

Exceptional durability without loss of resiliency.

Smooth, non-porous surface with natural lasting sheen obtained without using greasy or sticky materials.

Greater ease and economy in cleaning, as well as better appearance at all times.

Hood Rubber Tile Flooring may be specified for many types of buildings and uses.

Outwears ordinary floor coverings by a wide margin and costs less in the long run.

Many colorings and sizes make possible floor designs suitable for various types and sizes of interiors.

Booklet, in full color showing colors and typical designs sent upon request.

Federal Savings and Loan Association, Manchester, N. H.
THOMAS M. JAMES CO., Boston, Mass., Architects

Sizes and Thicknesses

Standard Thicknesses—⅛, 3/16, ¼ and ⅜ in.
Standard Sizes—4x4, 6x6, 9x9, 12x12, 12x6, 18x9 in.
Standard Border Sheets—48x36 in.
Internal and External Corners—4, 6 and 8 in. high.
Cove Base—2, 4, 6, 8 in. high, 36 in. long.
6 x ⅛-in. wall thickness cove base made with internal and external corner angles attached.
Wainscot Caps—2 in. high, ⅜ in. thick and 3 ft. long.
Stair Tread and Nosing—In one piece.

Size	Thickness	Tread	Nosing	Length
No. 1	¼″	13″	1½″	36″ and 42″
No. 2	3/32″	12″	2″	72″

Thresholds—5½ in. wide, ½ in. high, 4 ft. long.
Plinth Blocks—6⅜ in. high, 4 in. wide, 1 in. thick.

Standard Colors of Hood Tiles

201 Black White
202 White Black
203 Dark Gray Mixture
204 Napoleon Gray
205 Black Mixture
206 Red Mixture
207 Blue White
208 White Blue
209 Tennessee Pink
210 Dark Verde Antique
211 Light Verde Antique
212 Green White
213 White Green
214 Black Gold
218 Walnut Mixture
219 Cream Mixture
227 Tan Mixture
231 Ivory Mixture
239A Dark Brown Mixture
240A Light Brown Mixture
243 Medium Gray Mixture
247 Morocco
249A Black Green
250A Slate Green
253 Black Red Gold
254 Red Gold Black
255 Blue Blue
256 Red Paisley
257 Ivory Paisley
258 Light Green Mixture
101 Black
also several Plain and Terrazzo colors.

SUGGESTED SPECIFICATIONS FOR UNDERFLOORS

New Wood Sub-floors—All wood underfloors should be double floors, the top floor to be not less than ¾ in. thick, tongue and groove, kiln-dried flooring, boards not more than 3 in. wide, thoroughly blind and surface-nailed, and finished true and level to ⅛ in. plus the thickness of the Hood Tile below the finished floor line.

Old Wood Sub-floors—Replace worn and decayed boards with new lumber, thoroughly surface-nail all loose and springy boards, and sand floor smooth and even.

Before installing Hood Rubber Tile on wood floors, cement 1¾-lb. asphalt saturated felt paper to wood floor with linoleum cement, in opposite direction to underfloor, with seams butted, not lapped; felt to be carefully fitted at wall lines. Roll felt thoroughly with 150-lb. 3-section roller after applying to floor. Then cement Hood Tile as on concrete floors.

Concrete Sub-floors—Concrete floors to be steel-troweled to a smooth, level finish to the thickness of the tile below the finished floor line. All concrete must be absolutely dry, thoroughly bonded to fill, and must not have a chalky, scaly or sandy finish. Concrete laid in contact with ground either on or below grade shall be thoroughly membrane-waterproofed. Expansion joints or cracks to be filled with plaster of paris, or other crack filler, level with floor surface. If concrete floors have been painted, all paint shall be removed before installing tile.

Complete directions for installing Hood Rubber Tile will be sent upon request

KLEISTONE RUBBER COMPANY, INC.

Manufacturers of Rubber Tile

758 Cutler Street, WARREN, R. I.

DISTRIBUTORS IN PRINCIPAL CITIES

KLEISTONE
RUBBER TILE FLOORS

Product

KLEISTONE RUBBER TILE for floors and walls in veined and solid colors.

Description

Kleistone Rubber Tile—A resilient, noise deadening flooring of the highest quality standards, combining permanence with unlimited decorative possibilities. Its reasonable initial cost and low upkeep expense make it an ideal floor material wherever soft floors are desirable.

Being without fibrous content, it is almost entirely non-absorbent and its smooth surface, with proper care, permanently retains the original polished finish. Colors and markings go through to the back, and the entire thickness of the tile is made of the same high quality composition as the surface.

For Walls—Kleistone Tile is unusually well adapted for use on walls, because of its sanitary qualities and permanent freedom from any maintenance cost.

Sizes and Thicknesses

Standard Thicknesses—$\frac{3}{16}$", ¼" and ⅜".

Standard Sizes—4½" x 4½", 6" x 6", 9" x 9", 12" x 12", 6" x 12", 9" x 18".

Also any size unit larger than 4½" x 4½" that can be cut without waste from 18" x 18", 24" x 24", 34½" x 34½" or 28" x 69½" slabs; also diagonal half tile of any of the above standard sizes.

Special sizes that cannot be cut from above size slabs without waste will be billed at square footage of next larger standard size.

Border Strips—½", 1", 1½", 2", 3", 4", 6" wide; 24", 34½" or 69½" long.

Border Slabs—24" x 24", 18" x 34", 34½" x 34½" and 18" x 69½" to 28" x 69½".

Table Tops—Furnished in any width up to 34½" not over 34½" long.

Counter Tops—Furnished in any width up to 28", not over 69½" long.

Colors

Kleistone Rubber Tile is regularly made in 27 veined color effects, and in 4 solid colors as listed below. Additional colors can be manufactured, as required, to harmonize with any special decorative scheme.

Emblems, special design work and cutouts may be had in any colors to conform with architect's drawings.

Plain

303 Black
304 Red
308 Green
309 Dark Gray

Marbleized

202 Verde Antique
205 Red Paisley
207 Dark Sienna
209 Black and White
210 Black and Gold
211 Gray Paisley
213 Napoleon Gray
214 Brown Napoleon
215 White, Red and Black
216 White, Green and Black
217 Light Sienna
218 White and Black
219 Pink Tennessee
220 White and Blue
221 Blue and White
222 Green and White
223 Red, White and Black
225 Brown and Buff
226 Chocolate Brown
227 Buff, Black and Brown
228 Brown, Gold and White
229 Gray, Green, White and Black
230 Brown Paisley
231 Black Paisley
232 Light Brown and Yellow
233 Dark Red and Black
234 Dark Brown and Light Brown

Warranty

The life and satisfactory service secured from rubber tile floors being dependent upon their usage and care, no definite time warranty can be given, but we warrant our tiling against defects of material or manufacture, provided that our recommended cleaning agents and methods are used and we are given written notice of such defects within one year after completion of installation.

Samples and Service

Samples and literature mailed on request. Our Service Department is prepared to forward information regarding proper methods of installation, to make suggestions regarding designs, or furnish other pertinent information.

Specifications

Standard Specification for Rubber Tile Floors—(1) Rubber tile flooring indicated on drawings or as listed herein, shall be Kleistone Rubber Tile, manufactured by KLEISTONE RUBBER COMPANY, INC., Warren, R. I., or other tile of equal quality in the opinion of the architect. The rubber tile shall contain no fibrous material and shall be practically non-absorbent. Thickness of tile shall be .... inches, (insert $\frac{3}{16}$, ¼ or ⅜ in.) and all tiles furnished shall be of exactly equal thickness, cut true to size with square, clean-cut edges. The colors and markings of the rubber tile shall run through the entire thickness of the material and the tile shall be made of the same composition throughout. Colors and sizes of tile and border to be selected by the architect.

(2) The cement used in setting the rubber tile shall be waterproof and shall be "Topco" Cement manufactured by Templar Oil Products Co., Brooklyn, N. Y., or other make of waterproof cement approved by the architect.

(3) The contractor installing the rubber tile flooring shall be experienced in this class of work and shall employ only mechanics thoroughly familiar with the laying of rubber flooring. Before commencing work, the contractor shall ascertain whether the subfloor is suitable for the rubber tile work. If it is not suitable he shall not proceed with his work until all

Kleistone Rubber Tile Floor Installed in Church

defects are remedied. Tile and border shall be accurately fitted against all walls, pipes and other permanent projections. Borders, wherever possible, shall be approximately equal in width on all sides of each space. After setting, tile shall be thoroughly rolled in both directions with roller weighing not less than 150 lbs., and not more than 12 in. long. All cement shall be removed from the surface of tile and the floors shall be left broom clean by the tile contractor.

Specification for Concrete Underfloors to Be Covered with Rubber Tile—*(Include in mason's specifications for floors).* Concrete subfloor to receive rubber tile shall have a top layer 1 to 1½ in. thick, composed of 1 part portland cement to 2½ parts clean screened sand, troweled to a smooth sidewalk finish and free from high and low spots .... inches (insert $\frac{3}{16}$, ¼ or ⅜ in.) below the required finish floor level.

Joints shall be cut through top layer approximately 20 ft. apart, following the lines of floor beams and girders. After the concrete has set, the joints are to be filled and troweled even with top surface. No lines shall be struck on the surface, and it shall be delivered to the rubber tile contractor clean, dry and free from foreign material.

Cement hardeners and so-called integral waterproofings should not be used in concrete over which rubber tile is to be installed. They tend to retard evaporation of the moisture content.

In order to insure rapid drying, allow all possible ventilation in rooms where rubber tile floors are to be laid.

Concrete which has been frozen, or has a chalky or scaly surface, or which is not well bonded to fill, must be removed and replaced with top coat as above.

All concrete and masonry laid in contact with the ground, on or below grade, shall be thoroughly waterproofed by the membrane method.

Specification for Wood Underfloors to Be Covered with Rubber Tile—*(Include in carpenter's specifications for floors).* In spaces where rubber tile is called for in the plans and specifications, lay double floors; the top or finished floors to be ⅞ in. tongued and grooved, not more than 4 in. wide, driven tight, well nailed and finished true and level .... inches (insert $\frac{3}{16}$, ¼ or ⅜ in.) below the required finished floor level; joints and butts to be planed or scraped smooth.

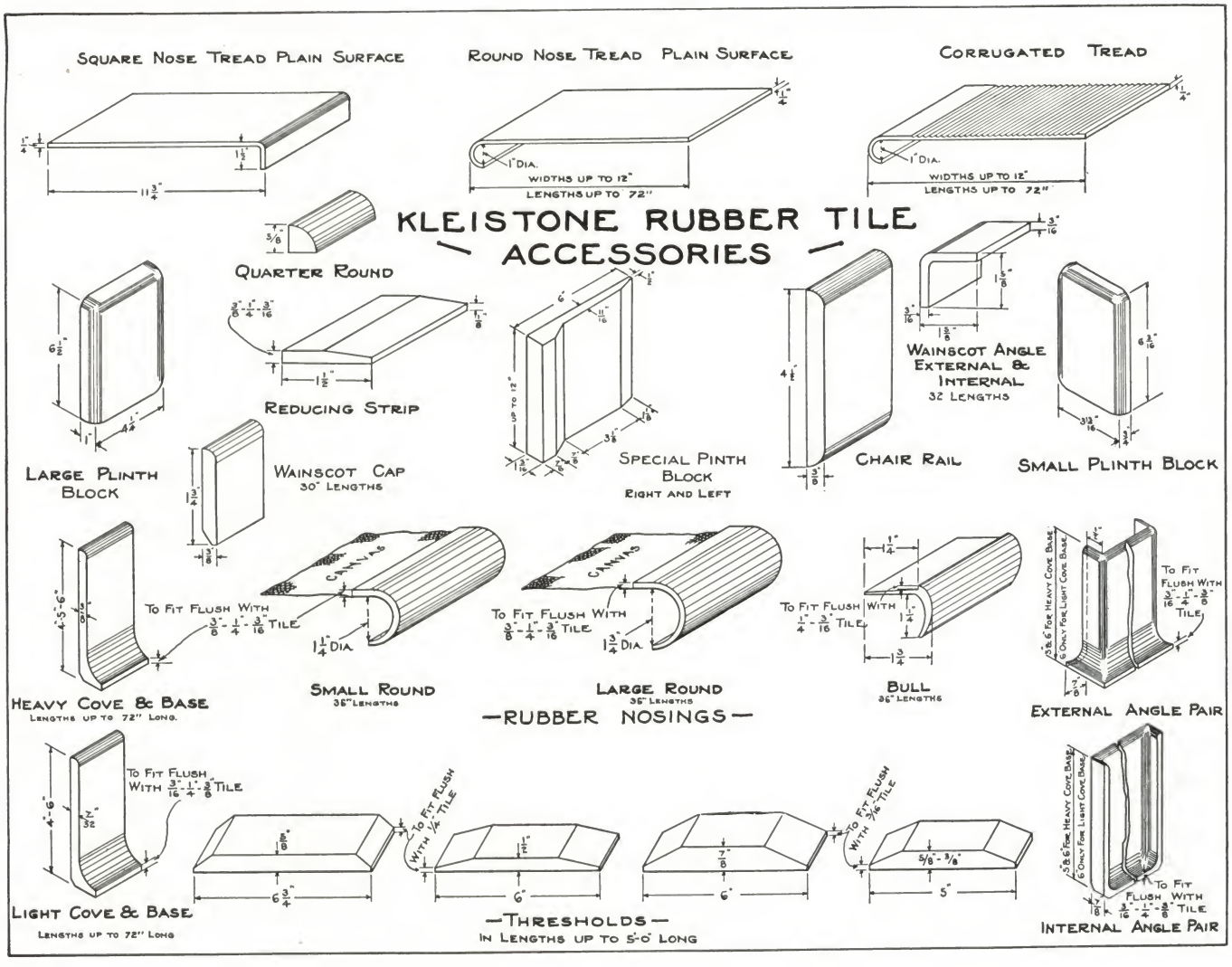
Old Work—In preparing old wood floors to receive rubber tile, remove all badly worn or decayed boards, and boards containing knotholes or loose knots, and replace with new lumber, in accordance with wood flooring specifications. Old floors to be thoroughly surface-nailed to secure all springy boards, loose butts or joints; joints or butts then to be scraped, planed or sanded smooth and even.

Note: In laying rubber tile floors over wood subfloors, both old and new, it is necessary to provide an interlining between the wood and the rubber to prevent any possible expansion or contraction of the wood floors from being communicated to the rubber tile. A light weight canvas or heavy cotton sheeting should be carefully tacked with special ½-in. flat headed tacks over the entire area of the wood floor. Care must be taken to drive the tacks well home so that the heads do not protrude above the surface of the canvas. Tacks should be scattered over the entire area of the floor on about 3-in. centers. 30-lb. Asphalt Saturated Deadening felt, cemented to the wood underfloor with linoleum cement, may be substituted for the canvas. The deadening felt must be carefully rolled to secure adhesion to the underfloor at all points, and the Rubber Tile is cemented to the surface of the felt with waterproof cement.

Specifications for Ground Over Which Rubber Cove and Base Is to Be Installed—Plaster, wood or other material against which base or wainscoting is to be installed shall be carried down to and finished square with the underfloor, making a clean, straight right angle with same, and free from lumps, dirt or other obstructions.

Installations

Thousands of Kleistone Rubber Tile Floors give satisfactory service in a wide variety of buildings. We will be glad to furnish a partial list of such installations for any locality in the United States.



THE R-C-A RUBBER COMPANY

Manufacturers of "Flexi-Flor" and "Wall-Flex" in Tile and Sheet Form

AKRON, OHIO

The Company

THE R-C-A RUBBER COMPANY was organized in 1931 under the laws of the State of Ohio and is affiliated with the Eclat Rubber Company in Cuyahoga Falls, Ohio, which has been in business since 1919.

THE R-C-A RUBBER COMPANY manufactures floor and wall coverings *exclusively*. In addition to the two types of Flexi-Flor and Wall-Flex described herein, Floor Mats, Door Mats, Automobile Mats, Stair Treads, Bath Mats, and similar coverings are manufactured.

Having devoted their entire efforts to the development of floor and wall coverings, they should be considered by the architect as authorities in this field. Using the latest machinery and up-to-date equipment, they are capable of economically producing high grade products. Capacity is such that they are prepared at all times to make prompt shipment so no work need be delayed while waiting for floor and wall coverings.

THE CONSTRUCTION OF FLEXI-FLOR AND WALL-FLEX

Both Flexi-Flor (Sheet and Tile Forms) and Wall-Flex are manufactured of the best materials obtainable. The resulting floor and wall coverings are flexible, resilient, sanitary, practically acid-proof and almost wear-proof.

Both products differ from those of nearly all other manufacturers by being made with the fabric *on the back* instead of as an insert. The advantages of this fabric backing are many. For example:

(1) The wearing thickness of the material is increased due to the fact that marbleization, in the case of our material, goes through the entire thickness of the product.

(2) The adhesion of our material to the surface to be covered, is increased and simplified as the problem is merely one of adhering fabric to that surface. Fabric, being a fibrous and non-elastic material, provides and makes for better adhesion to the rigid surface to which it is applied.

(3) Fabric backing insures little or no contraction or expansion at the point of adhesion, thereby reducing tendency to loosen or crack the adhesive coating.

(4) The fabric is adhered to the main rubber body by vulcanization under high hydraulic pressure in presses especially designed for the purpose.

COLORS, GAUGES, AND TILE SIZES OF FLEXI-FLOR AND WALL-FLEX

Sizes

Flexi-Flor is made in two forms, Sheet and Tile. Both are furnished in four thicknesses to meet varying traffic requirements:

For light traffic, in Sheet Form (for walls in Tile form), $\frac{3}{32}$ in. thick.

For ordinary traffic, in Sheet and Tile form, $\frac{1}{8}$ in. thick.

For heavy traffic, in Sheet and Tile form, $\frac{3}{16}$ in. thick.

For extra heavy traffic (special, not stocked), $\frac{1}{4}$ in. thick.

Sheet Flexi-Flor is 36 ins. wide and standard rolls are 22 to 30 yds. in length. Weight approximately 8 lbs. per yd. for the 36 ins. in width, $\frac{3}{32}$-in. thickness; 11 lbs. for $\frac{1}{8}$-in. thickness; 16 lbs. for $\frac{3}{16}$-in. thickness; 22 lbs. for $\frac{1}{4}$-in. thickness.

Tile Form Flexi-Flor is cut in the following sizes: 4x4, 6x6, 8x8, 9x9, 12x12, 16x16, 4x8, 6x12, 9x18 ins., or any special size.

Flexi-Flor as Used in a Beauty Salon

Feature Strips and Borders for Flexi-Flor or Wall-Flex are supplied in standard packages of 50 linear feet in widths of 12, 8, 6, 3, 2, 1½ and 1 in.

Wall-Flex is approximately $\frac{1}{16}$ in. thick and is supplied in rolls 36 ins. wide and 22 to 30 yds. in length, approximately 4 lbs. per lineal yard.

Colors

Both Flexi-Flor and Wall-Flex are made in a wide range of basic colors and include harmonizing combinations of lighter tones and pastel effects. So many combinations can be made from this variety that practically any decorative scheme can be produced. The range of standard colors is listed below:

Taupe Effect (3 colors marbleized).
Terra Cotta (multi-colors in deep red).
Mahogany Sienna (richness—with 3 colors).
Black and Cream White.
Red, Gold, Cream (combining 3 colors effectively).
Jet Black (not marbleized).
Verd Antique Black (3 colors in Italian marble effect).
Black Redtone (combination of 3 colors—very modern).
Pearl Gray (gray, white and black—3 colors marbleized).
Egyptian (Tan—5-color combination).
Delaware Royal Blue (two-tone blue and white marbleized).
Seafoam Green (3 colors in effective marbleizing).
Goldtone Buff (beautiful multi-tone buff marbleized).
Maple (3-color combination).
Walnut (3-color combination).
Dark Green and Gold Marbleized.
Pastel—
- Blue and White Marbleized.
- Green and White Marbleized.
- Cream and Blue Marbleized.
- Cream and Green Marbleized.
- Cream and Black Marbleized.
- Ivory and Brown Marbleized.

Cut Out Designs

As shown in the illustrations the beauty of Flexi-Flor can be enhanced by the judicious use of inserts, borders or cut out designs. These may be readily cut on the job from material of other color combinations. Layers can utilize scrap material or remnants, which might otherwise be wasted, to install distinctive designs. Borders or inserts can be cut from standard widths or will be furnished in the widths listed above.

FLEXI-FLOR ACCESSORIES

Cove Base

Cove base eliminates the necessity for special baseboards or quarter-rounds, makes a more finished appearance and permits easy floor cleaning.

Flexi-Flor Cove Bases are manufactured in all colors in 4 and 6-in. heights in both ⅛ and $\frac{3}{16}$-in. toe thickness. No fabric is used, the back of the base being knurled to provide good adhesion of the laying cement. The toe extends ¾ in. from the back to simplify laying and allow room for working and trimming if necessary. The back of the base is beveled at the bottom to allow a tight fit in the corner between floor and wall. We recommend that wall-to-wall corners be mitered for best appearance.

Caps

We do not supply preformed wainscot caps as experience has shown that stainless steel mouldings give a more satisfactory effect.

Stair Treads

We manufacture a complete line of stair treads in the same colors as listed for Flexi-Flor. These are made with nosing and have a ribbed surface for safety.

Can be furnished with or without eyelets for tacking in place. Made in three sizes: 9x18, 9x24 and 9x36 ins.

SUGGESTED SPECIFICATIONS FOR FLEXI-FLOR (Sheet and Tile)

All rubber floors shown on plans or listed herein shall be Flexi-Flor (Sheet or Tile form as indicated) manufactured by THE R-C-A RUBBER COMPANY, Akron, Ohio. Colors, sizes of Tile where used, and any special designs shall be as shown or later specified by the architect. Thickness shall be [$\frac{3}{32}$ in.] [⅛ in.] [$\frac{3}{16}$ in.] [¼ in.]. Color shall extend completely through the flooring and the reinforcing fabric shall be applied to the back and not inserted in the flooring.

Preparation of Sub-floor

Wood Sub-floors—Wood floors to receive rubber tile, shall be clean, sound, well nailed and of properly seasoned flooring. Before starting to lay the rubber flooring the flooring contractor shall carefully examine the wood sub-floor and assure himself that it is in proper condition for a satisfactory installation.

Over the sub-floor, adhere one layer of 30-lb. asphalt saturated felt. Length of the felt shall run across the joints of wood flooring; cross joints shall be staggered; and joints carefully butted. Felt shall be adhered to wood or cement subflooring by an approved brand of paste, such as Armstrong's Waterproof Cement No. 236, and shall be rolled into the adhesive with a floor roller.

Concrete Sub-floors—Concrete floors to receive rubber flooring shall be troweled to a smooth, level surface the thickness of the flooring and asphalt saturated felt below the finished floor line. Before installing the rubber flooring, the contractor shall examine the surface and assure himself that it is clean, dry and free from scale or dust which might prevent proper adhesion of the felt. Adhere flooring to the felt.

Installing Rubber Flooring

Sheet Form—On the properly prepared sub-floor, the Rubber Sheet Flooring shall be cut to fit the space accurately with as few seams as possible. Seams shall be made with an allowance of ½ to ¾-in. lap for double cutting. Joints with vertical surface shall be carefully scribed before cutting.

The rubber sheets shall be secured to the felt on concrete and subfloors with an approved grade of waterproof cement or paste, such as Sealex Green Label Adhesive No. 310, which shall be spread thin over the base surface and adhered. The entire surface shaull be immediately rolled with a floor roller but each strip shall be rolled from the center toward the seams to eliminate trapped air.

Tile Form—Rubber Tile shall be laid in an approved grade of waterproof cement, such as those mentioned above. Borders on two adjacent sides of room shall be laid first. The Border material shall be carefully scribed and fitted to form an exact right angle in the corner. Laying of the field Tile shall be started in this corner. Spread a thin coating of cement, set Tile about ⅛ in. away from the next piece and force gently into place, squeezing cement between Tiles. *Do not force.* Lay entire field and cut Border of other two sides of room to form a neat, tight joint. Roll thoroughly first one way and then the other, and clean surplus cement from surface immediately before cement dries on surface.

(*Note:* We recommend the use of waterproof cement around water pipes, waste pipes or steam pipes and along any exposed edges subject to moisture.)

Maintenance

After installation, clean floor thoroughly using any tri-sodium phosphate cleaner, and wax immediately wtih two coats of approved water emulsion wax allowing sufficient time between coats to permit wax to dry. Buff surface with electric floor buffer after wax is thoroughly dry.

The combination of black and white with gray and white tile with solid black border gives a pleasing effect in this waiting room in a doctor's office. Flexi-Flor gives the quiet effect desired in such offices.

The personalized effects obtained in this beautiful kitchen is brought about by the use of Flexi-Flor on the counters and drain, adding a finishing and decorative touch; one that deadens the clatter of dishes and eliminates breakage.

WALL-FLEX—WALL COVERING AND WAINSCOTING

Wall-Flex, as the name implies, is a flexible wall covering made exactly like Flexi-Flor, except that it is approximately $\frac{1}{16}$ in. thick. Colors are the same as those listed for Flexi-Flor. It is furnished in rolls 36 ins. wide and 22 to 30 yds. in length; weight is about 4 lbs. per yd.

Wall-Flex is suitable for many uses where a soil-proof, easily cleaned surface is required. The beautiful colors and marbleized finishes are appropriate for the finest types of installations in private homes, institutions or public buildings.

Wall-Flex in the home is used on bathroom walls, kitchens, playrooms, stairways, hallways and recreation rooms, either alone or in combination with Flexi-Flor, Sheet or Tile form. Because of the wide range and the possibility of unusual and beautiful combinations, the architect will find it possible to develop most pleasing and harmonious effects with these two products.

In public buildings, hospitals and institutions, Wall-Flex finds its major uses on corridor walls, lavatories, paneling effects and in operating rooms. It is particularly useful on table tops, desk tops, counter and similar horizontal surfaces.

Wall-Flex can be used for walls on showers in conjunction with rubber receptors as manufactured and furnished by the Brunswick-Balke-Collender Company.

Medium gauge $\frac{3}{32}$-in. thickness Tile produces beautiful tile walls. Wall cracks caused by settling of buildings, expansion and contraction, do not develop with our flexible Tile.

Installation

Wall-Flex can be readily applied over practically any type of sub-construction, such as plaster walls, wallboard, trowel finish cement, etc. Installation is simple and a first-class job can be obtained without difficulty. A good grade of paste is recommended. It should be slightly diluted and applied to the clean, dry sub-surface in a smooth thin coat after the Wall-Flex has been cut to fit.

After applying the paste or cement the Wall-Flex is applied by holding in place at the top of the strip and smoothing into position with hand or semi-stiff brush working toward the close seam. Double cutting the seams will improve the appearance.

Paneled effects, inserts, borders, and other special designs may be readily worked out by using mouldings of wood or metal.

Flexi-Flor today is suitable for and is used for every room in the home. Note the harmonizing use of Flexi-Flor in this beautiful rumpus room constructed for W. P. White, in the California Riviera. Architecture by Arthur E. Harvey, Los Angeles, Calif.

Maintenance

One of the features of Wall-Flex is the ease with which it can be maintained in a satisfactory condition. Dirt and grease are readily removed with luke-warm water and an occasional application of a good water emulsion wax will help to retain the pleasing surface appearance.

A FEW TYPICAL INSTALLATIONS OF FLEXI-FLOR AND WALL-FLEX

Office Buildings

General Motors Building, Chevrolet Offices, Detroit Mich.
B. & O. Railway Ticket Offices, Detroit, Mich.
First Federal Savings & Loan Co., Akron, Ohio
Y. M. C. A. Building, Glens Falls, N. Y.
Medford Building, Akron, Ohio
National Studio, Hollywood, Calif.

Hospitals and Sanitariums

Massillon State Hospital, Massillon, Ohio
Denver General Hospital, Denver, Colo.
McDowell Hospital, Orrville, Ohio
Kimball Sanitarium, Cleveland, Ohio
New England Baptist Hospital, Boston, Mass.

Industrial Offices

Crowe Nameplate Co., Chicago, Ill.
Adamson Machine Co., Akron, Ohio
Canton Engraving Co., Canton, Ohio
White Tool & Supply Co., Cleveland, Ohio
Steel Stamping Co., Lorain, Ohio

Stores and Restaurants

Gus Blass Department Store, Little Rock, Ark.
Peck Drug Stores—chain in Michigan
Strathmore Inn, Woronoco, Mass.
The Eastern Department Store, Los Angeles, Calif.
Block & Kuhl Department Store, Peoria, Ill.

Government Buildings

Jefferson Barracks, Jefferson Barracks, Mo.
Interior Department, National Park Service, Washington, D. C.
Securities Exchange Commission, Washington, D. C.
State Department, Washington, D. C.

Note the harmonizing effects of Flexi-Flor and the judicious use of Feature, which adds to this beautiful modernistic bar room. Architecture by Arthur E. Harvey, Los Angeles, Calif.

Flooring

BY SERVICISED PRODUCTS CORPORATION

11
59

Servicised

UNIVERSAL FLOORING PRODUCTS

The Servicised Products Corporation is uniquely qualified to use the word "universal" with reference to its flooring products, for their type and construction varies sufficiently to embrace the entire industrial and commercial as well as residential fields.

Servicised Floorings of rubber or cork and rubber composition are ideal for houses, schools, hospitals, office buildings and other types of buildings for human occupation, as a finished flooring laid over smooth wood or concrete sub-floors.

Servicised Floorings of asphalt base (Servicised Asphalt Plank) are ideal for patio and porch deck coverings in the home, and in commercial use cover viaducts, bridges and their approaches, are used on the floors of railroads and machine shops, passenger and freight stations, loading platforms, docks, warehouses, garages, cold storage plants, chemical laboratories and plants, packing houses and canneries, factories, dairies, creameries and laundries.

SERVICISED PRODUCTS CORPORATION
6051 WEST 65th STREET • CHICAGO, ILLINOIS

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SERVICISED FLOORING PRODUCTS include three types, all of which are remarkable for their beauty, durability and economy: Rubberlok Flooring, Rubber Tile, and Cork-Rubber Tile. Modern, versatile and colorful—their design possibilities are tremendous. All are sold and installed by authorized flooring contractors throughout the United States.

Rubberlok Flooring, Tongue and Grooved Rubber Tile—A floor in itself—not merely a flooring—Rubberlok is the only interlocking tongue and grooved rubber flooring manufactured. It makes a perfect tile effect, with non-fading colors, and may be laid over any type of sub-floor: wood, concrete, composition or steel. For details of construction see Page 11.

Servicised Rubber Tile—Identical to Rubberlok in composition, Servicised Rubber Tile is made in individual tiles which are not tongue and grooved. For details of construction see Page 12.

Servicised Cork-Rubber Tile—Manufactured from finely divided cork and rubber vulcanized together, this tile offers high flexibility, resistance to dirt, indentations and scratches and has lasting beauty. For details of construction see Page 13.

HIGH QUALITY—Carefully achieved and maintained by exact manufacturing standards, and constant laboratory testing.

LONG LIFE—The toughness and density of these Servicised Floorings will resist the impact and abrasion of traffic over a long period of years.

RESILIENCY—Servicised Floorings are resilient for the life of the material, yet sufficiently elastic to recover from identation.

Patio Floors and Roof Decks

A new Servicised development finding wide acceptance for patio floors and roof decks is Slate Surfaced Asphalt Plank. This material is essentially standard asphalt plank with a dense surfacing of colored slate particles thoroughly embedded into the top surface.

The coloring of the product makes it extremely adaptable in utilizing unused roof and floor areas. Colors are available that harmonize with the beauty of the structure itself. Brightly toned plank is in harmony with the typical vivid colors of patio and garden settings.

In addition, there are these practical advantages—low cost, light weight, waterproofness, and wear-resistance. Furnished in either single colors or combinations.

Servicised Flooring

The role that Servicised Flooring plays in the styling of the homes of today is an important one.

Exquisite colorings that key in as soft tones or high lights and infinite possibilities in design treatments, conform with every period and style of decoration and offer a fertile field to the designer, decorator and home owner.

Here is an economical, durable, easily cleaned flooring that, once laid properly, will not warp, chip, buckle or crack, and whose clear unfading colors will retain their beauty through many years of active service.

On this, and succeeding pages, Servicised Flooring is shown in various rooms in the modern home, typical examples of how this ideal flooring has been successfully installed and is in constant use in many homes all over the country.

In the Entrance

A gracefully descending stairway, plain, tinted walls, rubber treads to blend on the stairs, and a softly colored floor of Servicised Rubber Tile that is quiet and easy under foot—here is an ideal setting, conducive to pleasant "first impressions" of anyone's home.

In the Living Room

The modern living room is generally the largest . . . perhaps the most formal . . . and certainly the most lived-in room in the house. Here, where the family gathers, during daylight or evening hours, Servicised Rubber Tile is a flooring that may be adapted to any decorative theme, that is not too obtrusive, is durable, resilient, quiet under foot and resistant to all ordinary stains. With a cozy-looking rug over this tile, there is comfort and hominess.

In the Nursery

In this sunny room, specially set apart for the needs and entertainment of young hopefuls, Servicised Rubber Tile is the ideal solution to the problem of finding a flooring that is at once colorful, sanitary, water-proof, quiet, resilient and durable. Nursery patterns and silhouettes can be fabricated on order.

In the Game Room

Here a warm, informal atmosphere is achieved by maple paneled walls and a serviceable, water and alcohol-proof, easy-to-clean surface of Servicised Rubber Flooring in a large block pattern. Moreover, cigarette and match burns leave only a slight stain which is easily wiped off.

In the Kitchen

Nowhere . . . more than in this room where countless steps are taken day after day . . . will the mistress of the house appreciate a flooring that is soft and resilient under foot, water-proof, colorful and decorative . . . slow to soil, yet easily cleaned. Servicised Rubber Floor has all of these advantages and will retain them through years of constant service.

In the Laundry

The wear that a laundry floor receives is a real test for any type of flooring. The dampness and strong cleansing agents in the usual laundry demand a flooring that is rot-proof and waterproof over a long period of time, thus assuring a warm dry laundry the year 'round. Servicised Asphalt Tongue and Groove Flooring more readily fulfills these requirements than any other material.

In the Bedroom

"Modernity" in the bedroom . . . with plane surfaces, subtle color harmonies, unbroken lines sounding the keynote . . . is beautifully in keeping with a floor of Servicised Rubber Tile.

Extending from wall to wall . . . its smooth, but slip-proof surface is quiet, soft, and because of its low thermal conductivity is not cold under foot.

Custom-made floors of Rubberlok, designed to blend with any color theme, are economical in first cost, are easily cleaned and promote an atmosphere of restful intimacy.

In the Bathroom

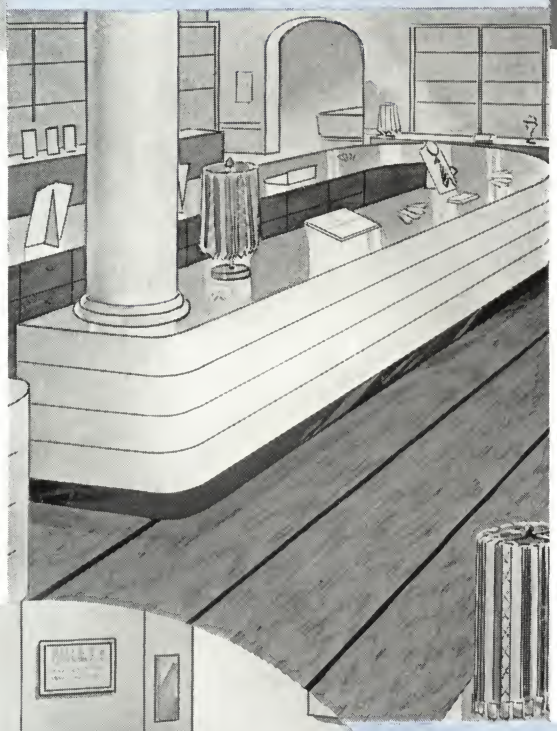
Beauty, utility, economy . . . all three are featured in this colorful bathroom with its walls of Servicised Rubber Wall Covering and Rubberlok Flooring. Since all joints in the flooring are tongue and grooved, the floor is waterproof and watertight. It is slip-proof when dry, and no more slippery than any other smooth-surfaced flooring when wet.

The walls, in plain tile pattern with custom-made border, are moisture-proof, moderate in price and easy to clean.

Years from now, this bathroom will be just as water-tight, just as colorful, just as lovely.

For Offices . . .

Floors of Servicised Rubber Tile are economical in first cost, easily maintained, slow to soil because of their smooth surface, quiet and resilient under foot, impervious to match and cigarette burns and will retain their full utility for many years.



For Stores . . .

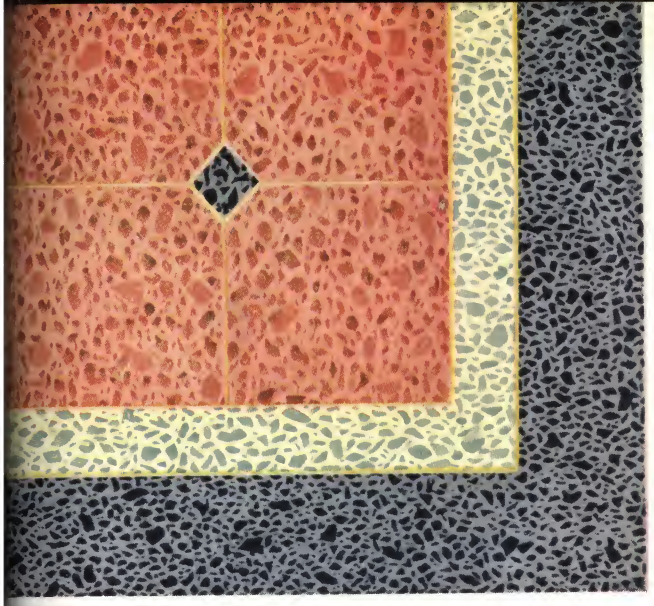
In achieving a harmonious, congenial background, most successful in promoting a profitable display of merchandise, floor covering plays an important part. No material has been found more permanently successful for this purpose than Servicised Rubber flooring. Its wide pattern and color possibilities make it adaptable to any style or color theme; its durability, ease under foot and easy maintenance are recognized qualities that account for its widespread use.

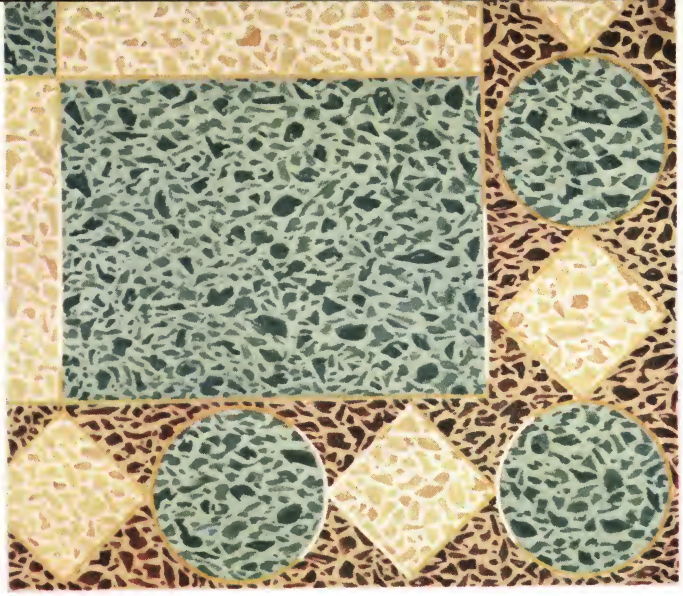
For Schools . . .

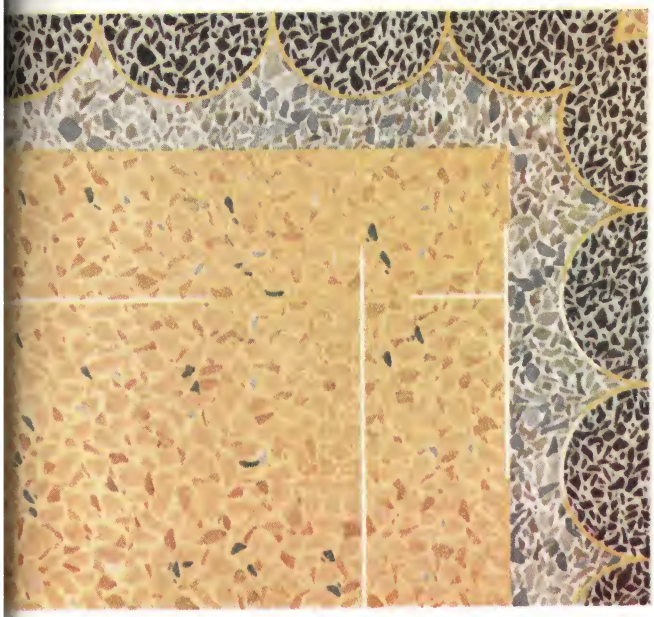
Any Architect or School Board, in selecting a suitable flooring for school corridors and classrooms can ask no more than that it be fire resistant, safe, that it be easily and quickly cleaned, that its purchase and installation costs be moderate, that it muffle the constant footfalls to which it will be subjected, and, finally, that these qualities be retained throughout a long period of use. Rubberlok Flooring has all of these advantages as well as enduring beauty.

For Hospitals . . .

Nowhere, more than on the rigorously cleaned, much-used floors of a hospital, is a flooring of Servicised Rubber Tile or Cork and Rubber Tile more appreciated. It is waterproof, hygienic and easily maintained; it muffles the constantly passing footfalls and its resilient surface is foot-sure and helps prevent fatigue; these, with variations in both pattern and color, will add cheeriness and an atmosphere of quiet to the hospitals of tomorrow.







Servicised Terrazzo Top Flooring

All the possibilities of terrazzo color and design can be achieved with Servicised Tongue and Grooved Flooring with Terrazzo Top. These pre-cast units furnish interesting uses in plain colors or designs on both wall and floor. Installation is simple and economical.

Accessories for Rubber Tile Flooring

Cove Base of any plain color or marbleized effect is manufactured 4", 5", or 6" in height to conform to either the 3/16" or 1/4" gauge.

Beveled Edging in colors to match the flooring is manufactured 3" wide and 42" long to conform to either the 3/16" or 1/4" gauge.

Capping, Nosing and Moulding for drain board assembly are manufactured in any selected color.

Safety Stair Treads are manufactured of the same Rubberlok quality with a smooth or corrugated surface, complete with a moulded rubber nosing. These are furnished in widths 8" or 12" and 42" in length.

Internal and External Corners of any plain color or marbleized effect is manufactured in Rubberlok quality in 4", 5", and 6" heights, in 3/16", 1/4", and 3/8" toe gauges, and 3/16", 1/4" and 3/8" wall gauges.

Rubber Tile Cement, specially developed for use with Servicised Flooring products, insures a permanent, trouble-free installation.

Colors

Ivory

Slate

Mottled Color "D"

Black

Brown

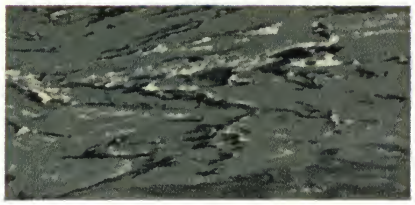
Mottled Color "E"

Gold

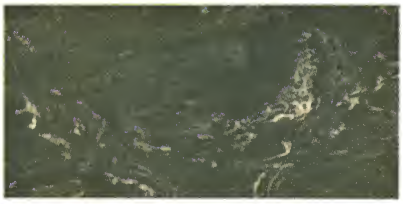
Blue

Mottled Color "F"

Green

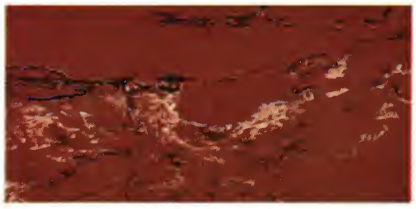


Mottled Color "A"

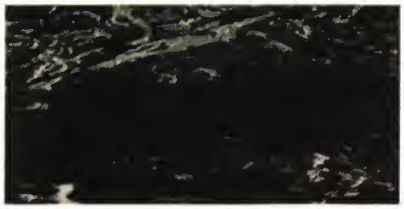


Mottled Color "G"

Red

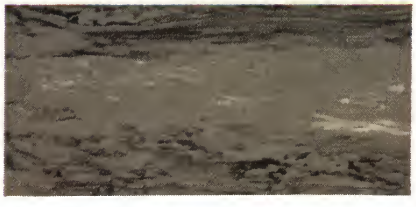


Mottled Color "B"

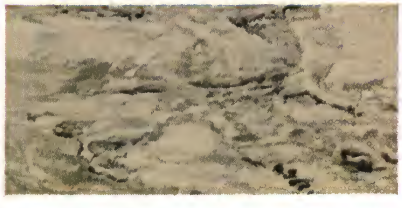


Mottled Color "H"

Gray



Mottled Color "C"



Mottled Color "I"

Rubberlok

TONGUED AND GROOVED RUBBER TILE

Rubberlok, formerly known as Syra-Bord, is manufactured from a pure plantation rubber base and a composition of carefully selected, finely divided, inert mineral fillers, pure non-fading mineral pigments, accelerators (required to produce vulcanization) and a small quantity of wax (a natural preserver of rubber) to increase and maintain the finished surface of polish.

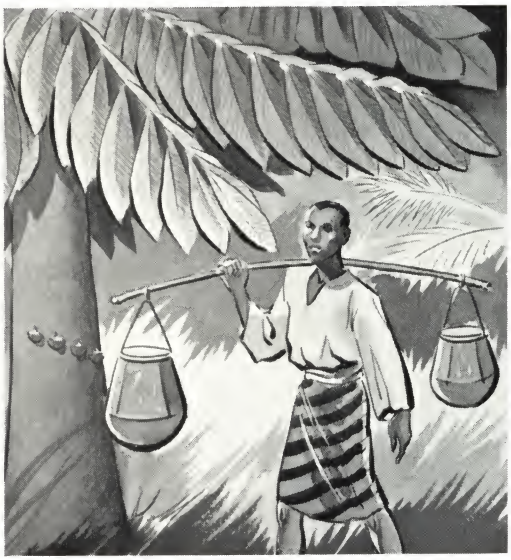
Rubberlok is moulded in ten-foot strips of individual tiles, vulcanized together, which are tongue and grooved on sides and ends. This is an exclusive feature, assuring an interlocked floor surface that will not curl, creep, warp or loosen up.

COLORS—Rubberlok is a custom-built floor, made in 9 standard plain colors and 9 standard mottled colors. The mottling in the individual tiles of the fabricated board can be specified to run in the same direction or alternate tiles can be cross-mottled.

The standard mottled colors:

- **"A"** Green mottled with black and ivory.
- **"B"** Red mottled with black and ivory.
- **"C"** Gray mottled with black, ivory and blue.
- **"D"** Cream mottled with black, red and blue.
- **"E"** Black mottled with red and gold.
- **"F"** Blue mottled with red and ivory.
- **"G"** Green mottled with ivory.
- **"H"** Black mottled with green and ivory.
- **"I"** Ivory mottled with green and black.

Mottled tiling in colors other than those listed above can be obtained at slight extra cost.



Following are the standard plain colors:

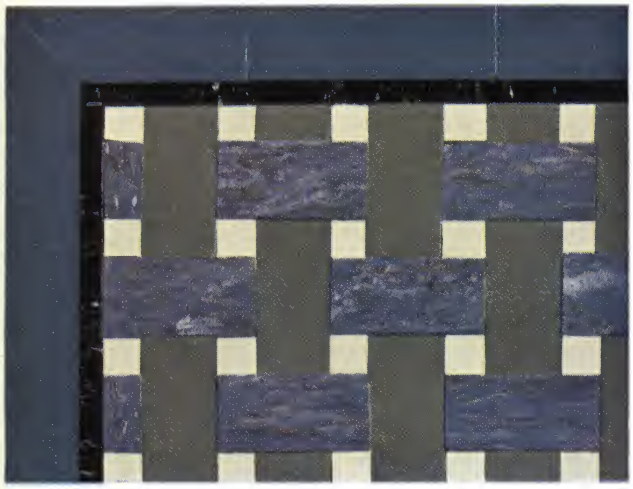
Ivory	*Green*	*Slate*
Black	*Red*	*Brown*
Gold	*Gray*	*Blue*

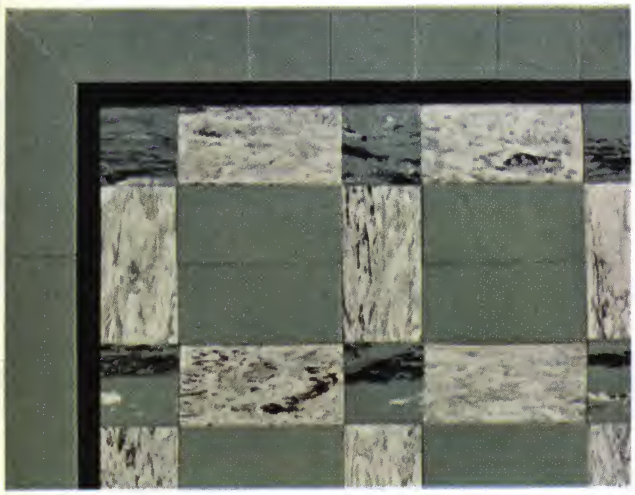
SIZES AND GAUGES—Rubberlok units are fabricated from individual tiles 6 x 6, 9 x 9, 12 x 12 in., vulcanized into strips or boards 10 ft. long. It is made in two gauges—3/16 and ¼ in. The ¼ in. thickness is recommended over concrete or similar sub-floors.

HOW INSTALLED—Rubberlok can be laid by unskilled labor in about one-fourth the time required to put down other types of tile flooring. It can be laid over any type of smooth-surfaced sub-floor and is sealed in place with waterproof rubber tile cement. Specifications for the preparation of sub-floors of various types can be obtained from SERVICISED PRODUCTS CORPORATION, Chicago, Illinois.

Flagstone Designs in Any Color Combination Are Available.

Servicised





RUBBER TILE

Servicised Rubber Tile is identical to Rubberlok in composition, and is manufactured by the same process. It differs from Rubberlok in that the individual tiles are laid separately and are not tongue and grooved.

Because of the careful compounding and uniform curing of this tile, it is destined to render long service and will retain its original beauty throughout its life. Like Rubberlok, it will not fade in sunlight, is resistant to alkali, most acids, and is easily and economically maintained.

PATTERNS

Servicised Rubber Tile is available in plain or mottled designs in many patterns and combinations.

COLORS

Servicised Rubber Tile is manufactured in the same eighteen base colors and color combinations as Rubberlok. See Page 11.

SIZES AND GAUGES

Servicised Rubber Tile is made in $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ in. thicknesses. Squares are 4, 6, 9, 12, and 18 in. Oblongs are 6 x 12, 9 x 18, and 12 x 24 in. Special sizes are 24 x 90 in.

HOW INSTALLED

Servicised Rubber Floors and Cork Rubber Tile can be laid over any type of sub-floor, wood, concrete, composition or steel, and are cemented in place with waterproof rubber tile cement. Specifications for the preparation of sub-floors of various types can be obtained from SERVICISED PRODUCTS CORPORATION, Chicago, Illinois.

Servicised

CORK RUBBER TILE

Cork Rubber Tile is manufactured from finely divided cork and rubber vulcanized together. This mixture of two materials, each of which has rendered satisfactory service under traffic, produces a floor combining the finest qualities of each at moderate cost.

Among its advantages are: high flexibility, enabling it to conform to minor variations of base without breakage; high dirt resistance; resistance to indentations and scratches; imperviousness to air, water and acids; lightness and strength and lasting beauty.

COLORS

Cork Rubber Tile is made in two shades of natural cork brown—light and dark.

SIZES AND GAUGES

Manufactured in 3/16 and 1/4 in. gauges, and in tiles 6 x 6, 9 x 9, 12 x 12, 18 x 18, 9 x 12, 9 x 18, and 12 x 18 in.

SPECIAL FLOOR DESIGNS

Flagstone patterns, which may be used with Rubber Tile and Cork and Rubber Tile, are made in 12 x 12 in. units in 3/16 or 1/4 in. gauge with any combination of colors desired. Nursery patterns with animal insets are made in 12 x 12 in. units in 3/16 or 1/4 in. gauge. Special patterns in silhouettes or modernistic designs can be fabricated according to specification. See illustrations on Page 11.

CORK-RUBBER FLOORING

The appearance and ease of installation of high-grade wood flooring are features of Servicised Tongue and Grooved Cork Rubber flooring. This product has the economy advantage of using an inexpensive wood sub-floor, but produces a more resilient, more attractive surface with blending shades of brown. Servicised Cork Rubber Tongue and Grooved flooring can be furnished in thicknesses of 3/8, 1/2, or 3/4 in.

For Swimming Pools

For Terraces

For Roof Decks

For Tennis Courts

For Institutions

For Industrial Plants

Swimming Pools—Walking areas surrounding public and private swimming pools can be made colorful and long-lasting with Servicised Mineral Surfaced Asphalt Plank. This durable, sanitary surface is impervious to water. The deeply embedded rock particles provide a non-slip, comfortably smooth surface for bathers' feet.

Terraces—Gardening costs can be cut, yet terraces can have year around beauty with Mineral Surfaced Asphalt Plank. The difficulties of sodding and weather changes are completely eliminated with these terraces that are in complete harmony with exterior color schemes. They are comparable in beauty to garden areas and are maintenance-free.

Roof Decks—Even where conditions are most severe, there is no worry that foot traffic will mar and kick up corners of the flooring when Servicised Asphalt Plank is used. Inexpensive, easy to install and durable, this product is the ideal surfacing for promenade and recreational roof areas.

Tennis Courts—Asphalt Plank provides a resilient playing surface for public and private tennis courts. The costly upkeep and seasonal limitations of clay courts are eliminated. The surface is rugged, easy underfoot, and court lines can be painted directly on the surface.

Institutions—Schools, churches, hospitals, jails and other institutions have outdoor areas where traffic, weather and other conditions make lawns costly or impossible. Mineral Surfaced Asphalt Plank with its variety of plain and combination colors solves the problem simply and economically.

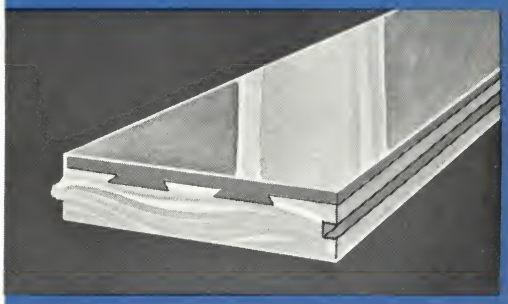
Industrial Plants—The non-skid, safety surface of Mineral Surfaced Asphalt Plank gives real service on walk-ways, ramps, loading platforms, and other exterior areas of industrial plants. This product is daily proving its worth on hundreds of bridge floors, bridge approaches and railway crossings all over the country. Servicised Armored Grill Filled Plank is the last word in floor wear—when all other products fail, Armored Grill Filled Plank will perform.

Rubber Top Flooring

New economy and simplicity of installation are the outstanding features of Servicised Rubber Top Flooring with its tongue and grooved wood base. It's as easy to apply as standard wood flooring—and it has the decorative, durable surface of modern rubber tile.

The illustration shows how the high quality rubber surface is permanently joined to the wood planking by a dove-tailing and cementing process. When these standard lengths of planking have been nailed in place in the ordinary way, the rubber surface is ready for use.

Additional advantages of the product are the variety of rubber tile patterns that can be worked out, and the choice of various types and qualities of wood base.

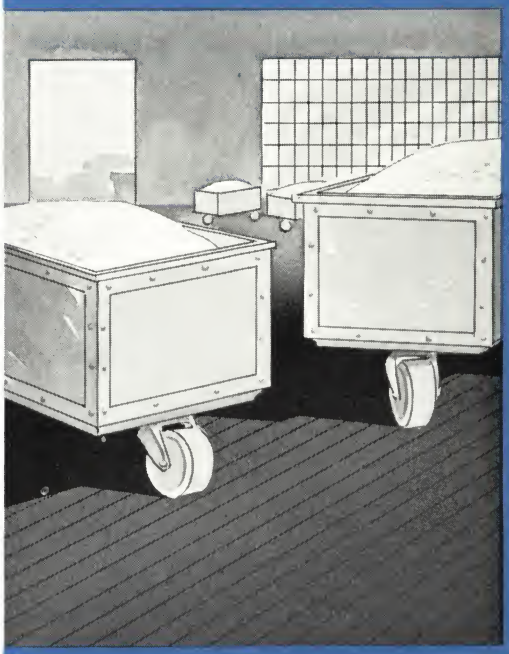


Industrial Flooring

The extraordinary combination of advantages in Servicised Industrial Flooring, made with an asphalt base, together with its comparatively low cost, offer to industries and institutions a way of avoiding the constant maintenance, expense and dissatisfaction occasioned by the use of other types of flooring not so well adapted to industrial conditions. Industrial plants, engine rooms, laundry floors, shipping platforms and the like must have a flooring capable of withstanding the rough usage, heavy loads and wear that the floor is bound to experience.

Where other floors have failed, Servicised Industrial Flooring has proved economical and enduring. Heavy cartons, barrels, vibrating machinery do not mar its rugged surface. It is durable, has great tensile strength, is resilient, does not fracture, is non-skid and acid-resisting.

Servicised Industrial Flooring comes to the job in conveniently sized planks of required widths, lengths and thicknesses. These are readily laid on any smooth, firm surface without special tools or high-priced labor.



Asphalt Tile

Asphalt Tile offers a non-slip, sound-deadening surface by reason of a new expansion edge. Flexibility of design is provided by a full range of plain or marbleized colors, which may be used singly or in combination. This variety of color and the versatility of the product make it the ideal choice wherever a rugged, beautiful flooring is needed.

Rubber Wall Covering

Servicised Rubber Wall Covering compounded with the same ingredients and with the same scientific care as Rubberlok and Servicised Rubber Tile fulfills the demand for permanent, decorative wall coverings, impervious to water, alkali or sunlight. In kitchens, bathrooms, dens, living rooms, offices, hospital rooms, playrooms, distinctive designs can be created to accord with individual taste. Wood graining, knotty pine, marbleized or pastel effects are produced to harmonize with the decorative scheme employed.

Servicised Rubber Wall Covering is manufactured 1/16 in. in thickness in sheets 24 x 9 ft. It is cemented to any type of wall surface and in addition to its beauty is permanent and easily maintained.

THE NEW HOME OF SERVICISED PRODUCTS CORPORATION

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6051 West 65th Street, CHICAGO, ILL.

1410 Oswego Boulevard, SYRACUSE, N. Y.

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Representatives in All Principal Cities

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QUALITY PRODUCTS
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WRIGHT RUBBER PRODUCTS CO.

RACINE, WISCONSIN

CHICAGO OFFICE: 13113 MERCHANDISE MART

RUBBER TILE FLOORING, STAIR TREADS AND ACCESSORIES

A pioneer in the rubber tile flooring industry, Wright gives you in Wrightex the quality gained by 20 years' experience of highly specialized research and manufacture.

Due to its inherent characteristics, Wrightex is adaptable in every type of building where long-wearing, practical, quiet, beautiful floors are desired. It is unusually suitable for hospitals, schools, churches, public buildings, institutions, hotels, banks, offices, stores and homes.

The wide range of colors—plain, mottled combinations to resemble marble and grained woods, special inlaid decorative designs—make possible an unlimited variation in arrangements of designs and patterns. There are 24 standard stock colors—mottled, blends and plain —and 40 non-stock colors readily available to fit your specifications. Each installation can be made to individually harmonize with the finish and decorations.

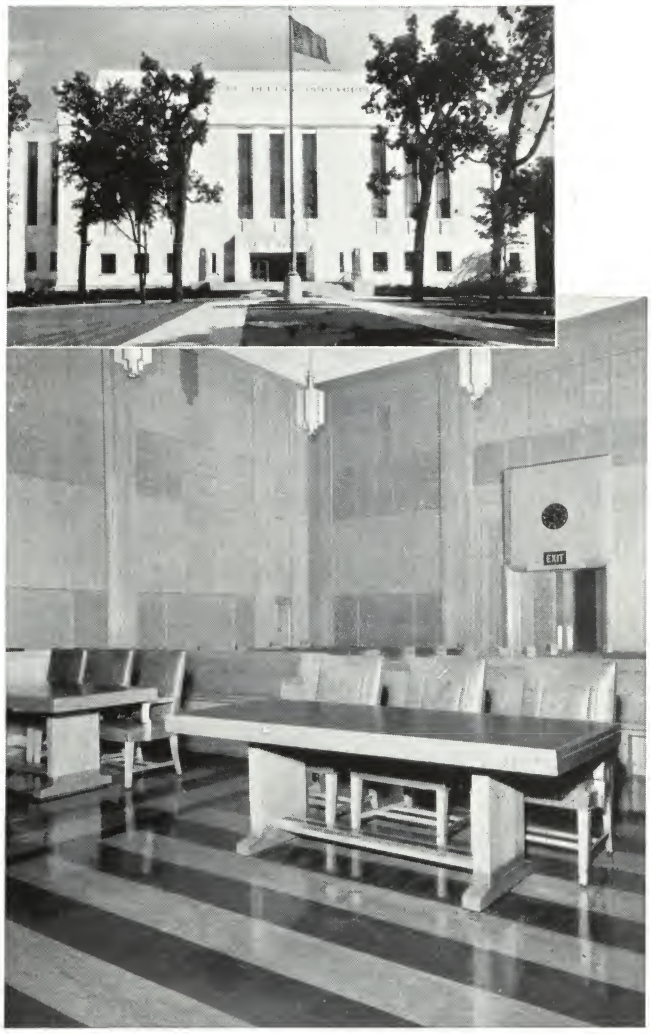
Wrightex is sufficiently tough and dense to resist the impact and abrasion of traffic over a long period of years. When properly installed, it will remain permanently flat without creeping, shrinking, curling or warping. In addition to its wear-resisting qualities, it is *resilient, non-absorbent, a non-conductor and fire resisting.*

Wrightex Sizes

Standard Thicknesses—⅛", $\frac{3}{16}$" and ¼".
Standard Sizes—4½" x 4½"; 6" x 6"; 9" x 9"; 12" x 12"; 18" x 18"; 3" x 6"; 4½" x 9"; 6" x 12"; 9" x 18".
Borders—18" x 36" and 24" x 48".
Right and left diagonals for all square tile.

Accessories

Bases—Straight or Cove 42" length—4" and 6" heights.
Corners—External and internal for 4" and 6" Cove base only.
Plinth Blocks—6¼" x 4¼" x ⅞" and 6¼" x 3⅞" x ⅞".
Thresholds—42" x 3" x ¾" and 42" x 5½" x ½".
Wainscot Trim—18" x 1¼" x 1¼".



Wrightex Floor Installation in Circuit Court Room, Winnebago County Court House, Oshkosh, Wis.
Architects: GRANGER & BOLLENBACHER, Chicago

GENERAL SPECIFICATIONS

Wood Subfloors—Shall be double floors of kiln dried, sound, matched flooring laid close and thoroughly blind nailed to bearings. Finished layer should not be less than 25/32" thick or more than 3¼" face (1 x 4" stock). Allow tile thickness plus 3/32" from subfloor surface to finished floor level.

Concrete Subfloors—Shall be structurally sound and hard, free from scale or foreign deposits. They shall be "bone dry" and have a smooth, steel troweled surface. Allow tile thickness plus $\frac{1}{16}$" from subfloor surface to finished floor level.

Preparing Subfloor—All wood subflooring and where ⅛" tile is to be used on concrete, the subflooring shall be covered with 30-lb. asphalt saturated flooring felt accurately fitted with edges carefully butted. Cement felt to wood in a full bed of linoleum paste and roll with 150-lb. roller to expel air bubbles.

Plaster Surfaces—Shall be laid to accurately set base and wainscot cap grounds carefully rodded and screeded and troweled to a hard, smooth surface. They shall be "bone dry."

Installing Wrightex—Each tile of Wrightex shall be set in a full bed of waterproof cement with joints flushed full by sliding it into position. Tile shall be laid true to line and pattern in accordance with approved shop drawings. Before setting cement has hardened, roll the surface in two directions with 150-lb. roller. Before surplus cement has hardened on the tile surface clean off thoroughly with a rag moistened with alcohol.

Where Wrightex is applied against plaster surface, size the plaster with a thin coat of waterproof cement. Allow cement to dry before installing tile.

Bases, wainscot caps, etc., shall be bradded to wood grounds in addition to cementing.

WRIGHTEX

VOORHEES RUBBER MFG. CO., INC.

125 East 46th Street, NEW YORK, N. Y.

VOORHEES AIR-PAD SHEET RUBBER FLOORING

Quiet — Resilient — Beautiful — Durable — 6 Foot Width

Voorhees Air-Pad—A carefully processed combination of sheet rubber and sponge rubber—is the most advanced development in floor covering. Due to its unique construction, Voorhees Air-Pad combines the beauty and color-softness of rubber with unsurpassed resilience and quietness.

Standard construction is in continuous lengths, *6 feet wide* and $\frac{3}{16}$ inch thick. A variety of beautiful colors are available, making possible an infinite number of decorative treatments.

Advantages

(1) Quietness—The smooth surface and the soft cushioning sponge rubber base of Voorhees Air-Pad Sheet Rubber Flooring absorb the sounds of footsteps and other traffic to a remarkable extent. *See the results of an exhaustive "noise test" conducted by Massachusetts Institute of Technology, details of which follow on page 3.*

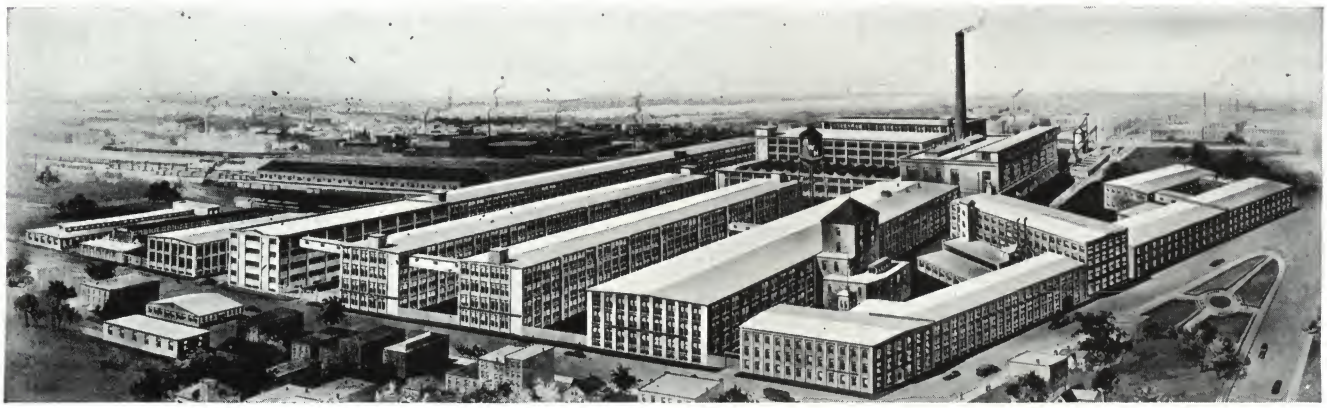
(2) The Ease and Softness of a Deep Pile Carpet—The constant jarring of nerves and the fatigue resulting from walking on hard unyielding floor surfaces are entirely eliminated with Voorhees Air-Pad with inevitable benefits to health.

(3) Years of Hard Usage—The yield of the sponge rubber under traffic reduces abrasion of the material, insuring long wear at the surface. *See also results of a test for ageing and deterioration of the sponge rubber used in fabricating Voorhees Air-Pad conducted by the Boston Woven Hose & Rubber Company on page 4.*

(4) Easily Maintained—Voorhees Air-Pad Sheet Rubber Flooring is extraordinarily easy to keep clean.

(5) Practically Slipproof—Because of its unusual resilience, Voorhees Air-Pad offers a much greater foot purchase than other types of resilient coverings, affording much greater safety.

(6) Adaptable to All Types of Architectural Design — The variety of colors in which Voorhees Air-Pad is available make it readily adaptable to any type of interior.



Plant of the Boston Woven Hose & Rubber Company, Cambridge, Mass.

In this modern completely equipped plant Voorhees Air-Pad Sheet Rubber Flooring is carefully manufactured to Voorhees' exact specifications

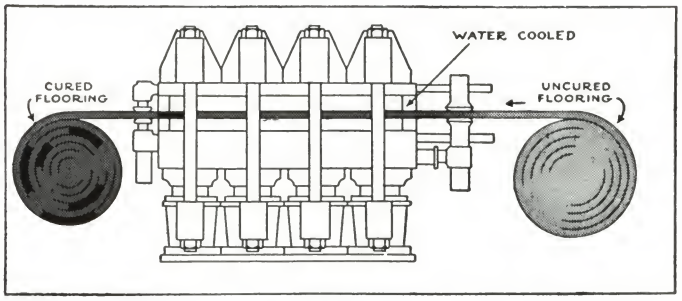
WHY THE ROTOCURE PROCESS OF CONTINUOUS VULCANIZATION INSURES ABSOLUTE UNIFORMITY IN VOORHEES AID-PAD FLOORING

In the manufacture of rubber goods, *vulcanization* may be compared to the baking process in making bread. The conventional method of making flooring is to vulcanize or "cure" the material between flat steel plates or "platens," usually 30 ft. long, under hydraulic pressures at high temperature.

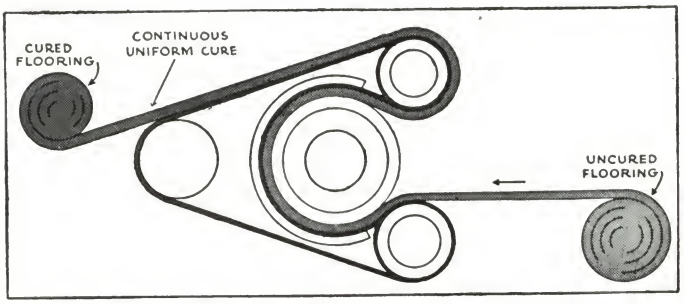
When only 30 ft. of flooring can be cured at one time the platens of the press must be raised and the next 30 ft. drawn into the press. The human element must be depended upon; yet it is true that operations manually performed are rarely the same when repeated. The accuracy of control, therefore, depends on the conscience and alertness of the operator. He is expected to open the press at exactly the right minute and pull the flooring exactly the right distance.

On all flooring made in a platen press there is at the end of each press length a narrow section which is vulcanized twice with resulting distortion and variation, and since over-vulcanization is destructive, we now have a strip of flooring with injured horizontal sections—three potential defects in approximately every 100 ft. of flooring.

The Rotocure Process of Continuous Vulcanization is the only practical method of producing uniform flooring entirely free from press overlaps. It solves the problem because the flooring is processed on an exclusive patented rotary type of press, radical in principle. It substitutes uniformity for variation by making the vulcanizing process automatic instead of spasmodic. Uniformity results not from the skill or experience of the operator, but from the unvarying precision of the machine. The result: flooring uniformly vulcanized that will give uniform service.



Old Style Platen Press



Rotocure Continuous Press

Construction

Because Voorhees Air-Pad Sheet Rubber Flooring is manufactured under the exclusive continuous cure method it permits the production of the *unusually wide (6 ft.) strips* in continuous lengths of from 60 to 90 ft. with no danger of "weak" or "rough" spots to cause unsatisfactory wear.

The Voorhees method of manufacture actually vulcanizes the sponge rubber to the underside of sheet rubber flooring. Thus any danger of separation is positively eliminated and a long lasting floor covering is assured.

Beautiful Floor in an Exclusive Florist's Shop
Illustrates the value of the Voorhees 6-ft. widths in creating large all-over designs

Voorhees Air-Pad Blends Well with Any Decorative Theme

There is a wide variety of available colors which makes possible an infinite number of attractive designs.

With the exceptional beauty and color softness of this fine flooring material and the latitude afforded by its unusual width, any skilled artisan with a flair for harmonious and artistic effects can do wonders in executing outstanding and unusual floor patterns designed by the architect.

We are glad at all times to consult with architects in the designing of unusual floor treatments. Specific information as to colors and treatments is always available on request.

Voorhees Accessories

The Voorhees line of accessories is built to harmonize with Air-Pad Flooring, and a wide selection is available to meet the requirements of the architect. Included are lightweight flexible, plain black Cove Base and Accessories, including Moulded Corners and Rubber Mouldings; Marbleized Stair Treads, Risers and Landing Mats.

Write us for additional information, including colors and sizes available.

VOORHEES RUBBER MFG. CO., INC.

SCIENTIFICALLY "SOUND-TESTED"
BY ONE OF AMERICA'S LEADING TECHNICAL INSTITUTIONS

The following report and the letter and graph reproduced below give the results of a test conducted by Massachusetts Institute of Technology to determine the relative noise-generating qualities of the various types of resilient floor coverings.

"These measurements were made to determine the relative noisiness of various types of resilient floor covering materials. As there appears to be no standard procedure for making such measurements, it was necessary to find how to produce a noise which would give consistent readings on any given sample and which would represent as nearly as possible the type of noise which might arise in ordinary use. It seemed logical to take the sound of footsteps as the most representative type of noise. The sound caused by footsteps may arise in three different ways: by setting the floor in vibration from the impact of the step, by setting any part of the shoe in vibration from the impact, or by setting the air directly in vibration when it is forced suddenly from between the sole of the shoe and the floor. This last possibility may be disregarded in making comparative measurements of this kind since the noise, as far as the flooring is concerned, will depend only on the nature of the surface which is the same for all the samples tested, that is to say, all samples have flat, non-porous surfaces.

"Several methods were tried for producing a satisfactory standard impact. The procedure finally adopted was as follows: A cylindrical piece of hard wood, 1¼ in. in diameter and 14¾ in. long, was suspended at one end by a flexible string 7 in. above the sample. The stick was held horizontal and the free end, which was rounded, was allowed to drop onto the center of the sample. The impact caused both stick and sample to be set in vibration. The resulting noise, though louder than that of an average footstep, appeared to vary with the different samples about as the sound of footsteps. This type of impact also represents other common sources of noise, such as the moving of chairs. The advantage of using a cylindrical stick with a rounded end dropped in this manner was that the measurements on a given sample were far more consistent than those with any other type of impact which was tried.

"The sound of the impact was picked up by a microphone placed with the front edge of the housing flush with one edge of the sample. All samples were cemented to the concrete (terrazzo) floor in a heavily damped room which was insulated from external noise. There was therefore, no possibility of obtaining misleading results due to reflectings in the room or to extraneous transmitted sounds. The samples were all of the same size, 9 in. x 9 in.

"The apparatus for measuring the sound pressure built up at the face of the microphone comprised: amplifiers, a voltage divider, and an indicating device. Two forms of indicating devices were tried: a rectifying voltmeter, and a cathode ray oscillograph. The meter appeared to give readings more representative of the annoyance value of the noise and was therefore used in the test. The method of measuring was to adjust the voltage divider until the sound of an impact gave a standard deflection on the indicating device. It was then possible to calculate the relative voltage produced by the microphone and hence the relative sound pressure due to the impacts.

What the Test Showed

"The results are tabulated below. The sound from the bare concrete floor is taken as the reference. The tabulated sound pressures are therefore the ratios between the sound pressures produced by an impact on the samples and the sound pressure produced by a similar impact on the bare floor. Results are also tabulated in decibels (db) above or below the reference level of the bare floor noise.

By definition: $$db = 20 \log \frac{PS}{PF}$$, where

PS = pressure of sound from sample, and
PF = pressure of sound from bare floor.

"The results are also shown graphically with the sound pressures referred to a reference corresponding to the threshold of hearing when the sound on the bare floor is 25 decibels above this threshold. This value is based on measurements of noise in non-residential buildings. The graph then represents to a first approximation the relative loudness of the noise which would be produced if the floor were covered with the various materials tested.

"It will be seen at once that the Voorhees Air-Pad, sample No. 5, gives a remarkably good performance in the reduction of noise."

TABULATION OF SOUND MEASUREMENTS

Sample		Relative sound pressure	db (Decibels)
0	Terrazzo	1	0
1	3/16-in. Rubber Tile	0.98	—0.1
1A	3/16-in. Rubber Tile	0.94	—0.4
2	1/8-in. Sheet Rubber	0.865	—1.2
2A	1/8-in. Sheet Rubber	1.11	0.8
	Voorhees Conqueror		
2B	1/8-in. Sheet Rubber	0.80	—1.4
3	3/16-in. Linoleum	1.07	0.6
3A	1/8-in. Linoleum	1.27	2.1
3B	6MM Linoleum	0.80	—1.4
4	3/16-in. Asphalt Tile	1.43	3.2
4A	3/16-in. Asphalt Tile	1.40	3.2
	Voorhees Airpad		
5	3/16-in. Sheet Rubber Flooring	0.21	—13.4

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

CAMBRIDGE A. MASS. December 3, 1936.

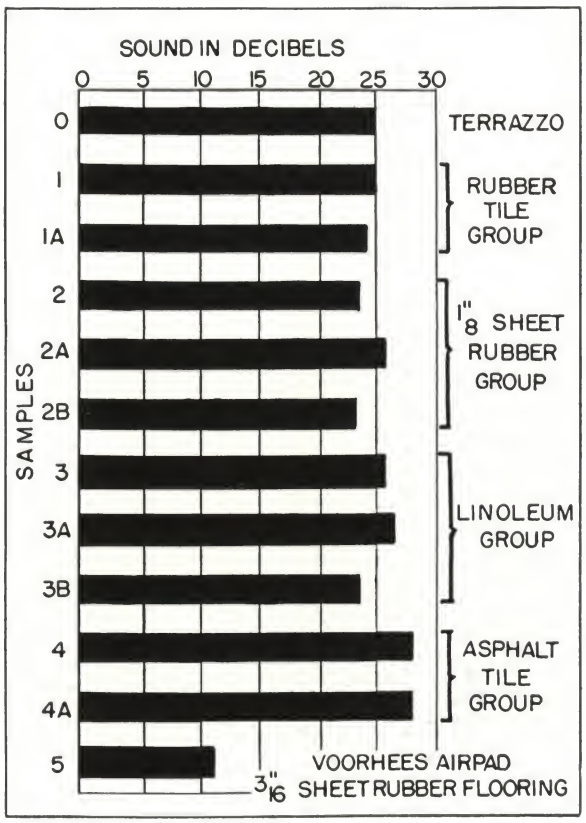
Mr. J. C. Walton,
Boston Woven Hose & Rubber Co.,
29 Hampshire St.,
Cambridge, Mass.

Dear Mr. Walton:

I submit herewith my report on the noise generation tests of the various samples of resilient floor coverings compared with VOORHEES AIR-PAD rubber flooring. The results are interesting to me on account of the large range of values obtained.

I hope that the report gives the information that you wished.

Very truly yours,
R. D. Fay.
R. D. Fay.



RESULT OF A TEST FOR AGEING AND DETERIORATION

The following report from the Technical Superintendent of Boston Woven Hose & Rubber Company, gives an excellent idea of the permanent strength of sponge rubber used in Voorhees Air-Pad Sheet Rubber Flooring:

"Numerous samples of sponge rubber used in fabricating Voorhees Air-Pad have been subjected to oxygen bomb ageing. The oxygen bomb ageing test, as you know, was developed to determine the life of various rubber products, and it has been established that 10 hours in the oxygen bomb at 300 pounds per square inch oxygen pressure at 70° C. is equivalent to one year of natural ageing. Sponge rubber samples have been aged in the oxygen bomb up to 200 hours, the equivalent of 20 years, and have been found to be still flexible and resilient.

"Since it is impossible to express deterioration by tensile strength measurements in the case of sponge rubber, a valuation of aged samples has been made by compressing the same and noting the ability of the sample to return to approximately its original dimensions. Using a weight of one kilogram per square inch to compress the sponge rubber and noting the thickness of the sample before and after this test, we find that sponge air-pad has a permanent compression of 1.8% when first made. After 50 hours in the oxygen bomb, this material has a permanent compression factor of 2.2%. This shows that after ageing equivalent to five years, the permanent compression is virtually the same as that of the new product."

ARCHITECTURAL SPECIFICATIONS FOR VOORHEES AIR-PAD SHEET RUBBER FLOORING

(1) Specification for Material—Where indicated on the Schedule of Finishes, Floors shall be of Voorhees Air-Pad Rubber Flooring. It shall be $\frac{3}{16}$ inch over all, plus or minus .010. Voorhees Air-Pad shall be constructed of $\frac{1}{8}$-inch marbleized rubber flooring and $\frac{1}{16}$-inch sponge rubber with reinforcing fabric as per samples on file in the office of the architect. Voorhees Air-Pad in 6-foot (6′) widths, where spaces permit. Colors and Designs as selected by the architect. The rubber shall have a natural lustrous surface.

(2) Preparation of Floors—Over which Voorhees Air-Pad is to be installed—

(a) Cement—All cement surfaces that are to be covered with rubber shall be hard trowled finished cement, dry, true, level and out of wind and shall be suitable for a wearing surface without score marks. *(If score marks are in place, these shall be filled by the flooring contractor before the installation of sheet rubber.)* [*Not suitable for concrete on grade.*]

(b) Wood—All wood floors that are to be covered with rubber shall be well nailed and properly seasoned flooring not to exceed 2½-inch face measurement. After wood flooring has been installed, same shall be machine sanded to a true, even plane.

(3) Specification for Felt—All felt used under rubber shall be 15 pound saturated with asphalt, waterproof and of a dense material, especially manufactured for this purpose, same as sample on file with the architect. No variations in this specification will be permitted.

(4) Specification for Laying—All surfaces that are to be covered with rubber shall be inspected by the flooring contractor in advance of delivery of material to the job. Any irregularities shall be reported to the architect, in writing, before installation. All installation work done shall be considered an acceptance of the underflooring by the flooring contractor. Underfloors shall be first cleaned and properly prepared for installation.

(a) Concrete Subfloors—Rubber Flooring shall be laid and cemented with Voorhees C-1133 Cement, lapping all seams one inch (1″) to allow for double cutting. Rolling not recommended. Seams shall then be cut and borders fitted as may be designated on the drawings. There shall be no cross seams in the field in spaces 75 ft. long or less. Any cement on the surface shall be immediately removed. The floors shall be properly waxed and protected after laying by the contractor and turned over in perfect condition.

(b) Wood Subfloors—All Wood Floors shall be covered with 15 lb. saturated felt of approved make. Felt shall be installed at right angles to the joints of the floor. Saturated felt shall be cemented with linoleum paste, all seams lapped and double-cut to insure proper joints. It shall be thoroughly rolled and after rolling carefully, checked to eliminate any possible "air-trapping". *Then proceed with installation of Voorhees Air-Pad as outlined under (a) Concrete Subfloors.*

(c) Marble-Terrazzo-Ceramic Subfloors — The flooring contractors shall fill all cracks and joints. Cover subfloor with 15 lb. saturated felt of approved make, lapping seams and double-cutting to insure proper fit. Saturated felt must be cemented with Voorhees C-1133 Cement, thoroughly rolled and carefully checked to eliminate any possible "air-trapping". *Then proceed with installation of Voorhees Air-Pad as outlined under (a) Concrete Subfloors.*

Caution—***(a)*** All linoleum paste and Voorhees C-1133 Cement shall be applied with a saw-tooth cut steel trowel. Teeth shall be cut to a depth of approximately $\frac{3}{4}$ in. and spaced approximately $\frac{3}{4}$ in. apart.

(b) Proper care shall be taken that in cutting seams the saturated felt paper shall not be cut.

(5) Specification for Edgings and Nosings—All edges at doorways or other openings where rubber ends shall be fully protected by the installation of proper edgings as may be approved. All stair treads to be covered with rubber shall have suitable nosings properly installed. Nosings to be selected by the architect in advance of awarding of contract.

(6) Specification of Voorhees C-1133 Cement—

(a) It shall be of a casein-latex base.

(b) It shall be sufficiently waterproof after drying to resist the action of water.

(c) When set will be permanently flexible.

(d) Of a consistency that will trowel readily, giving an approximate coverage of 200 square feet to the gallon.

(e) Shall be absolutely free from alcohol.

Samples—Samples of cement and rubber flooring shall be submitted for approval.

Miles Laboratories, Inc., Elkhart, Ind., Alka Seltzer Plant

30,000 sq. ft. of general and executive office space are covered with Voorhees Air-Pad Rubber Flooring

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For other Mundet products, including Cork Insulation and Cork Bulletin Board, see File Index

"JOINTITE" CORK TILE FLOORING

Mundet "Jointite" Cork Tile is manufactured in two thicknesses, namely $\frac{5}{16}$ and ½ in.

Mundet "Jointite" Cork Tile is composed of the very best selected cleaned and screened cork shavings. These shavings are placed in moulds of the proper depth to produce the tile thicknesses desired and are subjected to tremendous pressure to insure the proper density for floor use. The moulds are then placed in an oven maintained at a relatively high degree of heat. This heat allows the rosin in the cork shavings to liquefy and acts as a binder for the shavings, thus no foreign substance is needed to hold the shavings together and the natural properties of the cork is not impaired in any way.

"Jointite" Cork Tile is produced in three shades, all of which are brown in color, some light, some medium and some dark. These shades are obtained by governing the period of baking. Proper designs and arrangements of an artistic nature can be obtained by laying the tile in the different shades.

Ideal for

Corridors, halls, vestibules, ramps, stair treads, hospitals, schools, colleges, railroad stations, libraries, telephone rooms, offices, gymnasiums, churches, bathrooms, bedrooms, sleeping porches, nurseries, banks, theatres, courtrooms, art galleries, museums, etc.

Uses and Advantages

(1) Comes in various sizes, suitable for any floor.
(2) Does not shrink, swell or warp.
(3) Only absolutely pure cork used in its manufacture.
(4) Immune to grease, ink and most liquids.
(5) Cannot catch or absorb dirt or moisture.
(6) Easily cleaned, washable with soap and water.
(7) Varying shades of color are created by varying the temperature when baking. No coloring matter is used.
(8) Cannot splinter, tear, corrode, rot or crumble.
(9) Easy to walk upon due to its natural elasticity.
(10) Hard heels on Mundet "Jointite" Cork Tile are noiseless.
(11) Cosy and warm owing to its insulating qualities.
(12) Restful to the eye as well as to the ear.
(13) Highly compressed, hence strong, firm and durable.
(14) Not slippery, even when wet.

Sizes

12x36 in. is standard size. We also make standard 6, 9 and 12-in. squares; special 3, 4 and 5-in. squares; 3x18, 4x18, 6x18 and 9x18-in. border strips; and 9x36, 6x36, 6x12, 4x36, 4x8, 4x12, 3x12, 3x9 and 3x6-in. oblong strips.

Cove Base

We furnish Mundet "Jointite" Cork Tile Sanitary Cove Base in all heights.

Specifications

All cork tile stair treads and cork tile floors to be ½ or $\frac{5}{16}$-in. thick cork tile.

The tile to be highest grade pure cork throughout, solid, compressed, properly baked. There must be no forcing substances whatever in the tile. Only high grade, waterproof, elastic cement shall be used in applying the tile. All joints to be securely and hermetically cemented.

Where wood is used as a base under tile, nothing inferior to tongued and grooved flooring ⅞ in. thick, 6 in. maximum width, shall be used to support Mundet "Jointite" Cork Tile. It must be well fitted, tight, firmly nailed, smooth and level.

Where cement is used as a base under tile, it must be of a nailing quality and it shall be at least 1 in. thick and shall be made of 5 parts of acceptable clean screened sand, and 1 part fresh cement. It must be troweled smooth. Allowance must be made for ½ or $\frac{5}{16}$-in. thickness of tile. Do not lay cork tile before the concrete has set and dried.

Note (1): **Nosing**—Mundet "Jointite" Cork Tile is adaptable to any type of nosing on stair treads.

Note (2): **Cove Base**—The wall and floor must make a true and smooth right angle with each other so that the Mundet "Jointite" Cork Tile Cove Base will fit evenly throughout with both the wall and floor. There must be no foreign lumps or dirt on the surfaces. Surfaces may be of any standard acceptable backing—wood, plaster, cement, etc.

The Norwood Telephone Exchange, Cincinnati, Ohio—Flooring of "Jointite" Cork Tile

ARMSTRONG'S

FLOORS AND WALL COVERINGS

for Homes and Public Buildings

1939 EDITION

LINOLEUM - LINOWALL - CORK TILE - RUBBER TILE - ASPHALT TILE - CORK CARPET - LINOFLOR
MASTIC ARMOFLOR - LINOTILE (OIL-BONDED) - MONOWALL - MONOCORK - FLORMASTIC
UNDERLAYMENT - CORK CARPET - CORK BULLETIN BOARD - FELT-CUSHION MASTIC TILE

ARMSTRONG CORK COMPANY
LANCASTER PENNSYLVANIA

ARMSTRONG CORK COMPANY · LANCASTER, PA.

The Company has manufactured cork products and building materials for 79 years. Its Dun and Bradstreet rating is AAA1.

Branch Offices in 31 cities. See addresses on outside back cover of this catalog.

Products—Following is a list of products of interest to architects and builders. Products described in *Sweet's Architectural Catalog* are italicized.

Flooring Products—Armstrong's *Asphalt Tile, Cork Tile, Cork Carpet, Linoleum, Linoflor, Linotile (Oil-Bonded) Mastic Armoflor, Monocork, Felt-Cushion Mastic Tile, Armstrong-Stedman Reinforced Rubber Tile, Flormastic* for industrial cold mastic floors, *Underlayment*, Lining Felts, Adhesives, *Cove Bases, Thresholds, Stair Treads, Risers*, Furniture Rests, Cleaners, Wax.

Wall Coverings and Wallboards—Armstrong's *Cork Tile, Linowall, Monowall, Temlok, Temwood, Temboard, Temlok De Luxe Insulating Interior Finish, Rubber Plinths, Wainscot Caps, Chair Rails, Moldings.*

Acoustical Materials—Armstrong's *Corkoustic* and *Temcoustic.*

Bulletin Board—Armstrong's *Cork Bulletin and Tack Strip Board.*

Insulation—Armstrong's *Corkboard, Cork Covering for Cold Lines, Temlok Sheathing, Lath, and Roof Insulation*, Insulmastic for High Temperature Insulation.

Vibration Isolation—*Vibracork* for isolating reciprocating and vibrating machinery.

Expansion Joint—Cork Composition Expansion Joint for concrete slabs, wood block, and glass brick.

Cork Brick—for dairy barns.

Distribution—Armstrong's Linoleum and Linowall are sold by department stores, furniture stores, and other retailers of home furnishings and floor coverings, as well as by linoleum contractors in all parts of the United States.

Armstrong's Resilient Tiles are sold and installed by authorized flooring contractors. The names of reliable distributors in any locality can be obtained from the Armstrong Cork Company, Lancaster, Pa., or any branch office listed on the back cover of this catalog.

Armstrong's Monowall is sold by lumber dealers.

Prices—Since Armstrong's Linoleum, Linowall, and Resilient Tiles are sold through distributors, it is impossible for the Company to furnish information on the installed cost of any of its products, inasmuch as many factors beyond its control (local labor charges, areas of rooms, etc.) determine this. Armstrong distributors, however, will be glad to furnish architects and contractors with quotations on specific work.

FIVE SERVICES FOR ARCHITECTS

Armstrong's Architectural Service Bureau will furnish assistance in any problem pertaining to the use of Armstrong products for floors and walls.

Armstrong's Bureau of Interior Decoration, in charge of an experienced interior decorator, will suggest designs for floors and walls, with complete room color schemes and scaled miniatures of designs if desired. In requesting this service, please furnish room dimensions, color preferences, drawings, data on exposure, etc.

Samples of all products are available to architects. Whenever possible, please indicate the colors, grades, and gauges in which you are specifically interested.

Specifications in A. I. A. file size for any Armstrong floor or wall product are available upon request. See also pages 32 to 39 of this catalog.

Special Literature on all products will be supplied.

Note—It is suggested that architects contemplating the use of Armstrong products specify the colors or patterns by the numbers given in this or other Armstrong literature. Many of the colorings offered in the Armstrong Line are exclusive with Armstrong and cannot be duplicated in other materials. It is also suggested that selection be made from actual samples of the materials, rather than from color plates, which are only relatively accurate.

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Battleship Linoleum is 6mm., 3/16", or 1/8" gauge linoleum in solid colors without pattern. Rolls are 6' wide.

Plain Linoleum is the same quality as Battleship, but refers to the lighter and more decorative colors. It is supplied in 1/8", Medium (3/32"), and Standard (5/64") gauges. Rolls are 6' wide.

Linosets—See page 10 for design suggestions.

Linostrips—Machine-cut strips 5/8", 1", or 1 1/2" wide and 45' long are available in Battleship and Plain. Also 1/4" strips of No. 46 Chocolate, 45' long, in 3/16", Heavy, and Medium gauges.

Borders—Battleship and Plain are offered in 90' rolls 3" to 36" wide; and Plain No. 27 Black in 6", 9", or 12" strips in 1/8", Medium, or Standard gauge.

Cove Base—Page 24.

Specifications—Page 32.

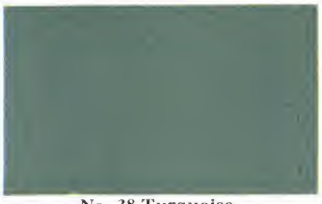
In addition to the colors shown on this page, No. 27 Black is available in 3/16", Heavy, Medium, and Standard gauges.

No. 23 White
1/8", Medium, Standard

No. 24 Pearl Gray
1/8", Medium, Standard

No. 26 Silver Gray
1/8", Medium, Standard

No. 22 Dark Gray
3/16", 1/8", Medium, Standard



No. 38 Turquoise
1/8", Medium, Standard

No. 43 Oriental Blue
1/8", Medium, Standard

No. 29 Cadet Blue
1/8", Medium, Standard

No. 30 Midnight Blue
1/8", Medium, Standard

No. 45 Fawn
1/8", Medium, Standard

No. 28 Tan
1/8", Medium, Standard

No. 20 Brown
6 mm., 3/16", 1/8", Medium, Standard

No. 46 Chocolate
3/16", 1/8", Medium, Standard

No. 44 Willow Green
1/8", Medium, Standard

No. 42 Jade
1/8", Medium, Standard

No. 21 Evergreen
3/16", 1/8", Medium, Standard

No. 48 Canary Yellow
1/8", Medium, Standard

No. 41 Orange
1/8", Medium, Standard

No. 39 Chinese Red
1/8", Medium, Standard

No. 40 Ruby
1/8", Medium, Standard

No. 47 Eggplant
1/8", Medium, Standard

No. 49 Coral
1/8", Medium, Standard

No. 25 Terra Cotta
3/16", 1/8", Medium, Standard

No. 33 Chartreuse
1/8", Medium, Standard

No. 37 Deep Rose
1/8", Medium, Standard

ARMSTRONG'S MARBELLE LINOLEUM

Marbelle is linoleum in an allover marble effect, without pattern.

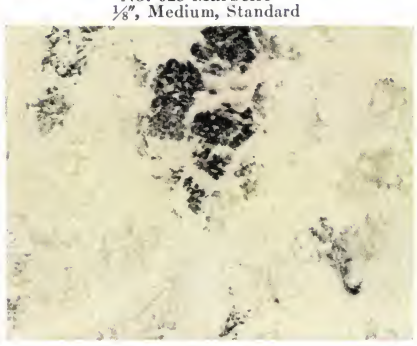
Gauges—3/16″, Heavy (1/8″), Medium (3/32″), and Standard (5/64″).

Border Strips—Marbelle strips can be furnished in rolls of any width from 3″ to 36″ and 90′ long. No. 021 Black Marbelle is available in 6″, 9″, or 12″ wide border strips in 1/8″, Medium, and Standard gauges.

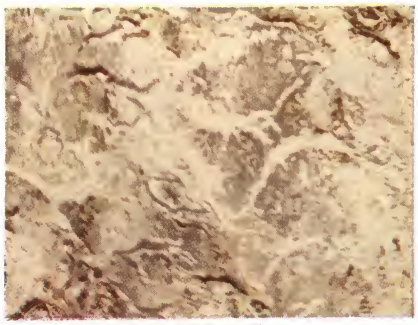
Linostrips—Any pattern in strips 5/8″, 1″, or 1 1/2″ wide, in 45′ rolls.

In this modern market, Plain and Marbelle Linoleum are combined to produce a colorful but thoroughly practical floor. The Marbelle No. 03 is accented with Linostrips of jade green. Tops of tables and counters also are Marbelle Linoleum.

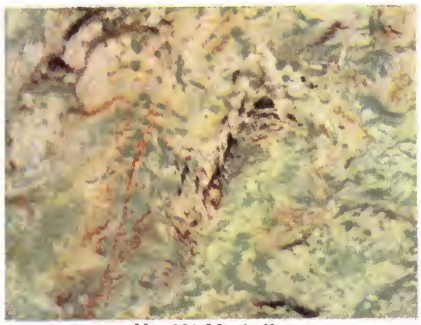
No. 025 Marbelle
1/8″, Medium, Standard



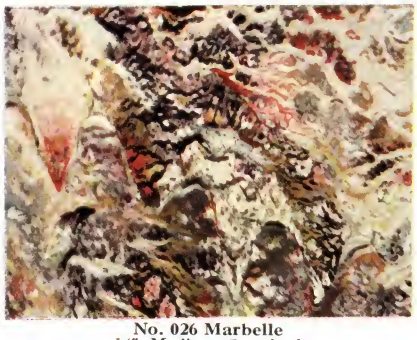
No. 032 Marbelle
1/8″, Medium, Standard



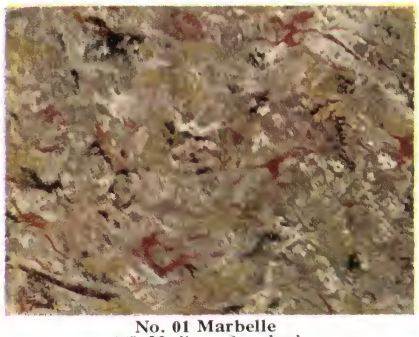
No. 09 Marbelle
3/16″, 1/8″, Medium, Standard



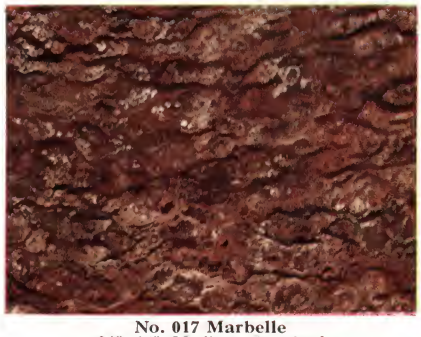
No. 030 Marbelle
1/8″, Medium, Standard



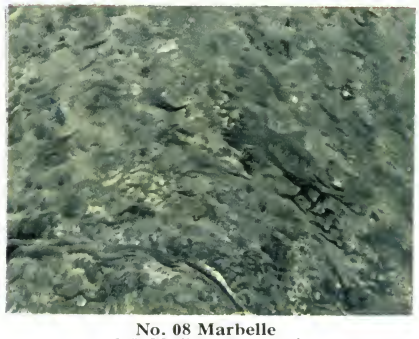
No. 026 Marbelle
1/8″, Medium, Standard



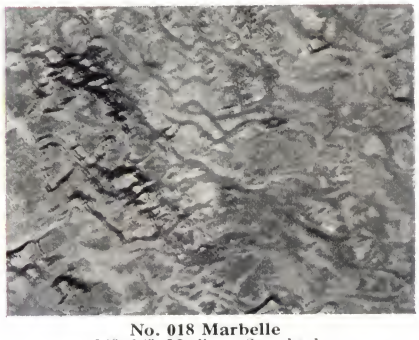
No. 01 Marbelle
1/8″, Medium, Standard



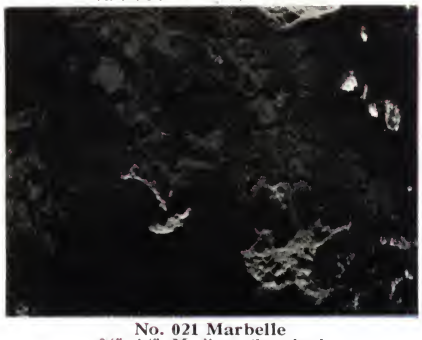
No. 017 Marbelle
3/16″, 1/8″, Medium, Standard



No. 08 Marbelle
1/8″, Medium, Standard

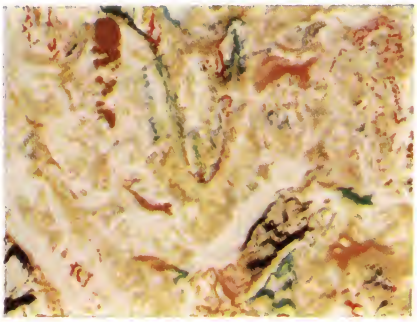


No. 018 Marbelle
3/16″, 1/8″, Medium, Standard



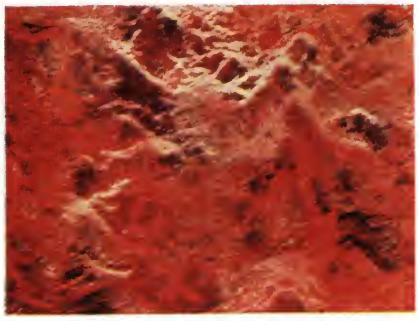
No. 021 Marbelle
3/16″, 1/8″, Medium, Standard

No. 014 Marbelle
⅛", Medium, Standard

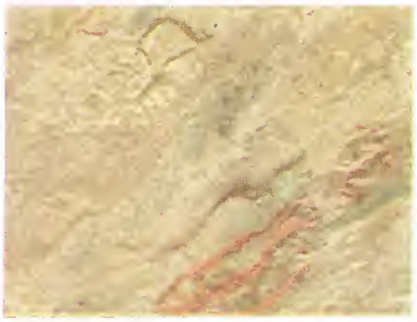


No. 028 Marbelle
⅛", Medium, Standard

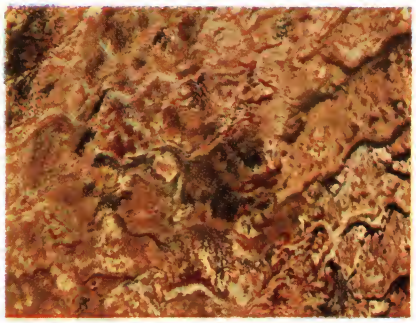
No. 013 Marbelle
⅛", Medium, Standard



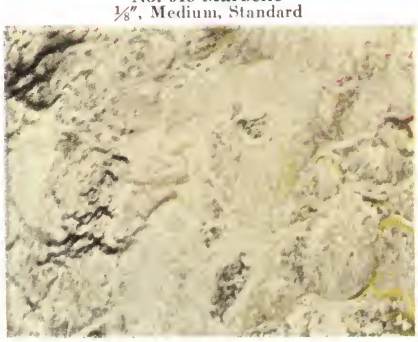
No. 015 Marbelle
⅛", Medium, Standard



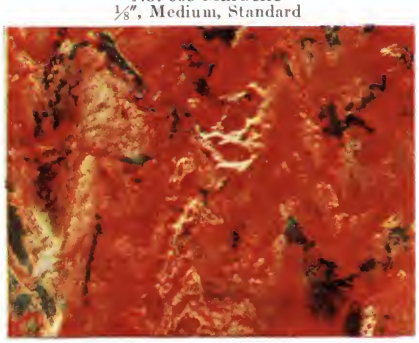
No. 035 Marbelle
⅛", Medium, Standard



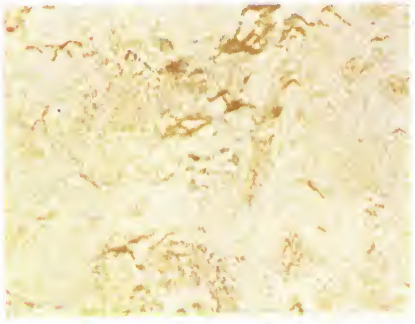
No. 033 Marbelle
⅛", Medium, Standard



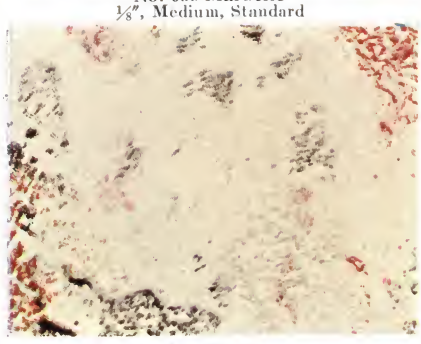
No. 038 Marbelle
⅛", Medium, Standard



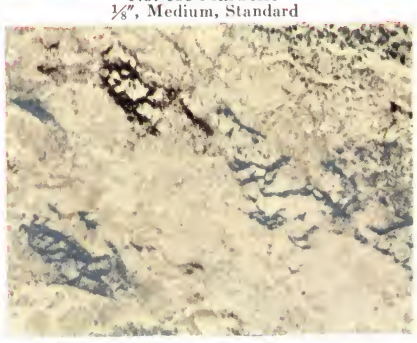
No. 036 Marbelle
⅛", Medium, Standard



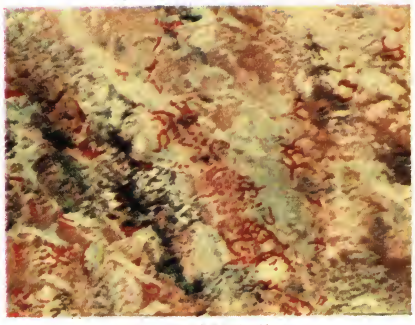
No. 037 Marbelle
⅛", Medium, Standard



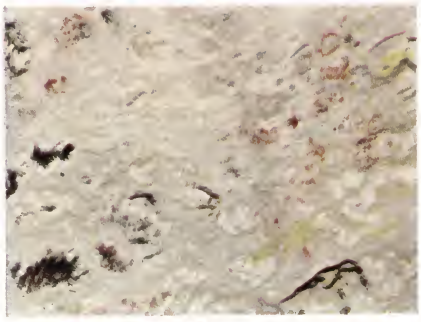
No. 016 Marbelle
⅛", Medium, Standard



No. 039 Marbelle
⅛", Medium, Standard



No. 034 Marbelle
⅛", Medium, Standard



No. 024 Marbelle
⅛", Medium, Standard

No. 06 Marbelle
⅛", Medium, Standard

No. 03 Marbelle
⅛", Medium, Standard

ARMSTRONG'S MONOBELLE LINOLEUM

Monobelle is a new type of linoleum developed by Armstrong. It differs from Marbelle in that the allover marble effect is produced by tones of a single color, rather than by the combination of colors. The colors run through the full thickness of the composition to the burlap back. Like Marbelle, Monobelle may be bordered with harmonizing or contrasting colors of Plain Linoleum. It also forms an attractive border material for Embossed Inlaid or Straight Line Inlaid Linoleum. The illustration below shows No. 042 Monobelle used with strips of Plain Linoleum and a Ready-Cut Linoset.

Gauges—Heavy (1/8″), Medium (3/32″), Standard (5/64″). Rolls are 6′ wide.
Border Strips—in rolls from 3″ to 36″ wide and in any length up to 90′.
Linostrips—in strips 5/8″, 1″, or 1 1/2″ wide in 45′ rolls.
Specifications—See page 32.

No. 046 Monobelle
1/8″, Medium, Standard

No. 045 Monobelle
1/8″, Medium, Standard

No. 044 Monobelle
1/8″, Medium, Standard

No. 042 Monobelle
1/8″, Medium, Standard

Armstrong's Ready-Cut Linoset (cup and saucer design) inset in field of No. 042 Monobelle Linoleum with strips of No. 48 Canary Yellow and No. 23 White. Sink top, desk top, and floor border are No. 30 Midnight Blue. Wall is No. 704 Ivory Linowall with Flash Type Cove and Base. Table top is white linoleum. Colors in designs are midnight blue, canary yellow, and white.

No. 043 Monobelle
1/8″, Medium, Standard

No. 040 Monobelle
1/8″, Medium, Standard

No. 041 Monobelle
1/8″, Medium, Standard

ARMSTRONG'S JASPÉ LINOLEUM

Jaspé Linoleum presents a two-tone striated appearance. Jaspé is made in 3/16″, 1/8″, Medium (3/32″), and Standard (5/64″) gauges. Rolls are 6′ wide.

When cut into strips and laid with 1/4″ interliners of No. 46 Chocolate Plain Linoleum, No. 16 and No. 17 Jaspé can be employed to create plank-floor effects. Pieces of No. 46 Chocolate are used to simulate the pegs or wedges.

In Jaspé Linoleum, the colors run through the full thickness to the burlap back. This material is widely used for commercial and institutional floorings where traffic is severe, because it has a smooth, dirt-resistant surface. The markings of Jaspé tend to make tracked-in dust less noticeable until the floor can be cleaned.

Linosets—Special designs can be cut at the factory.

Linostrips—Machine-cut strips 5/8″, 1″, or 1 1/2″ wide and 45′ long in Battleship and Plain Linoleum are available for use with Jaspé. Also 1/4″ strips of No. 46 Chocolate, 45′ long, in 3/16″, Heavy, and Medium gauges. Also 36″-wide rolls of No. 16 or No. 17 Jaspé in 3/16″, Heavy, or Medium for plank-floor effects.

Borders—Battleship, Plain, and Jaspé borders are offered in 90′ rolls 3″ to 36″ wide; and Plain No. 27 Black in 6″, 9″, or 12″ strips in 1/8″, Medium, or Standard gauge.

Cove Base—Page 24.

Specifications—Page 32.

No. 13 Driftwood Gray Jaspé
3/16″, 1/8″, Medium

No. 5 Silver Gray Jaspé
1/8″, Medium, Standard

No. 6 Azure Blue Jaspé
1/8″, Medium, Standard

No. 15 Steel Gray Jaspé
3/16″, 1/8″, Medium

No. 7 Beige Jaspé
1/8″, Medium, Standard

No. 8 Teak Brown Jaspé
1/8″, Medium

No. 011 Apple Green Jaspé
1/8″, Medium

No. 16 Malay Brown Jaspé
3/16″, 1/8″, Medium, Standard

No. 19 Hunter Green Jaspé
3/16″, 1/8″, Medium

No. 14 Rose Taupe Jaspé
1/8″, Medium

No. 10 Rust Jaspé
1/8″, Medium

No. 12 Taupe Jaspé
3/16″, 1/8″ Medium

No. 17 Autumn Brown Jaspé
3/16″, 1/8″, Medium

No. 9 Tan Jaspé
1/8″, Medium, Standard

No. 11 Marine Blue Jaspé
1/8″, Medium

ARMSTRONG'S EMBOSSED INLAID LINOLEUM

Embossed Inlaid—In Embossed Inlaid Linoleum, portions of the design are slightly depressed, producing a flooring in which the blocks or other elements stand out in relief, but in which the hardness and coldness of hard floors are replaced by the comfort and resilience of linoleum.

"STREAMLINE" AND "THREE-LEVEL" EMBOSSING

"Streamline" embossing makes cleaning easy by preventing dirt from collecting in the depressed sections. It also tends to conceal irregularities in the subfloor and to break up highlights that cause a glassy appearance.

Another Armstrong design effect is "three-level" embossing, which makes the raised portions appear to be at different levels. This makes the design more interesting and further prevents glare.

In many of the Embossed Inlaid patterns, the blocks are shaded. This shading not only adds to attractiveness but also tends to conceal tracked-in dirt and dust.

Providing a floor effect not otherwise obtainable in resilient materials, Embossed Inlaid Linoleum has found wide application in residences. It has also been popular in restaurants, tea rooms, shoe stores, and high-class specialty shops of all kinds; as well as in the offices of physicians, dentists, and other professional workers.

Limited space makes it impossible to show typical applications of this material in living-rooms, dining-rooms, and bedrooms, but color plates of such rooms are available upon request. Other suggestions will be found in Armstrong advertisements, which appear frequently in the leading national magazines.

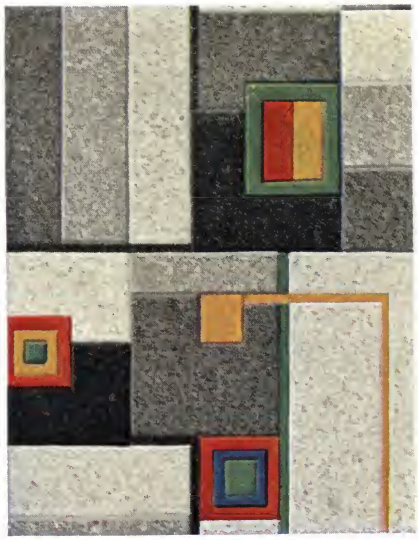
The designs shown here are only a few of the scores available. The complete line is illustrated in Armstrong's Pattern Book, available to architects upon request.

Gauges—Heavy (1/8″), Medium (3/32″), and Standard (5/64″), in rolls 6′ wide.

Borders—Embossed Inlaid is usually bordered with Plain, Monobelle, or Marbelle. See page 11.

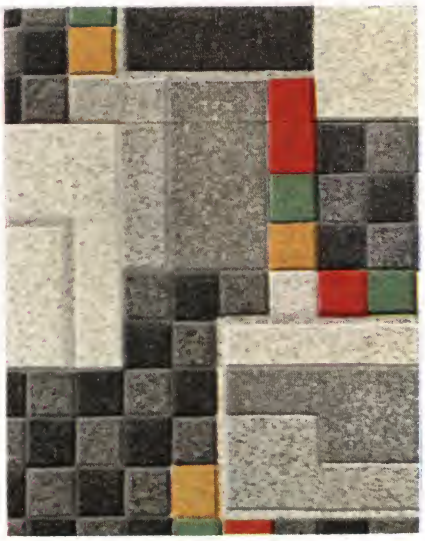
Cove and Base—See page 24.

Specifications—See flooring specifications, page 32.



No. 5531 Embossed Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 6310 Embossed Inlaid—Heavy (1/8″) Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only



No. 3381 Embossed Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 5352 Embossed Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 3281 Embossed Inlaid—Medium Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only

No. 6291 Embossed Inlaid—Heavy (1/8″) Gauge
(Plate shows approx. 1/5 scale) 2 yards wide only

No. 246 Straight Line Inlaid—Heavy (1/8") Gauge
(Size of Blocks—6" x 6") 2 yards wide only

Straight Line Inlaid Linoleum consists of plain or marbleized units of design keyed to a burlap backing by tremendous pressure. The name of this material arises from the fact that the lines between the blocks of the pattern, which are die-cut, are sharp and distinct, in contrast to the slightly irregular lines separating the blocks of the pattern in Armstrong's Embossed Inlaid Linoleum.

In Straight Line Inlaid, which offers a combination of beauty and durability, the colors run through the full thickness of the material. Dozens of attractive patterns in an assortment of large-scale and small-scale designs are available for kitchens, bathrooms, enclosed sun porches, nurseries, offices, restaurants, institutions, and stores.

Gauges—Straight Line Inlaid is supplied in Heavy (1/8"), Medium (3/32"), and Standard (5/64") gauges. Rolls are 6' wide.

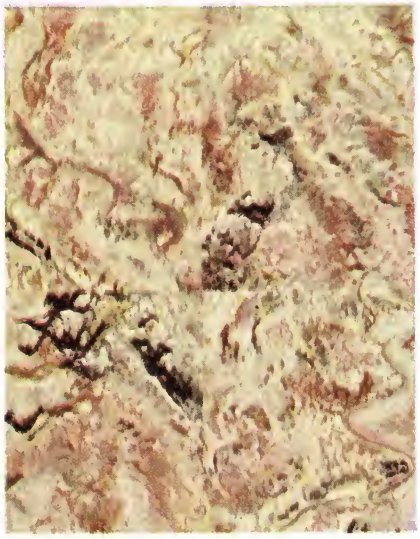
Linosets—See page 10.

Borders—Harmonizing or contrasting colors of Plain, Jaspé, Monobelle, and Marbelle Linoleum are often used as borders for floors of Straight Line Inlaid. See pages 3, 4, 6, 7, and 11.

Cove and Base Treatments—See page 24.

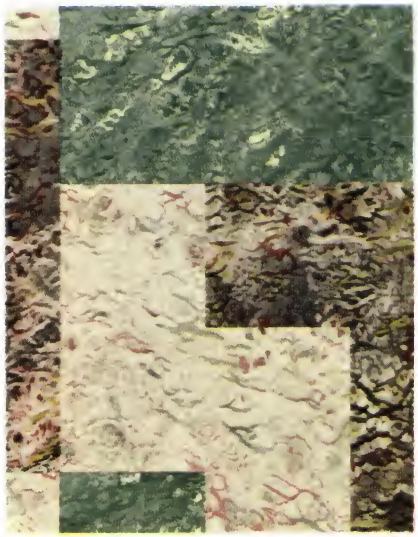
Specifications—See page 32.

No. 0356 Straight Line Inlaid—Standard Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

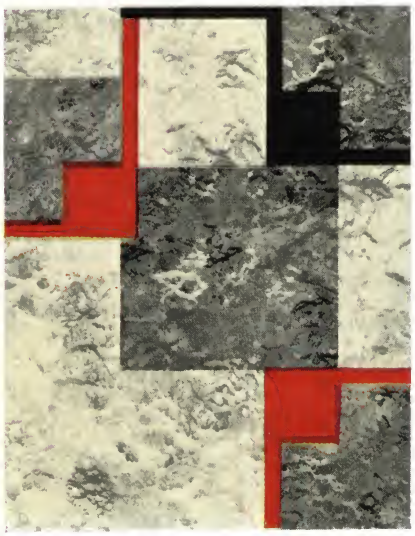


No. 0382 Straight Line Inlaid—Standard Gauge
(Size of Blocks—9" x 9") 2 yards wide only

No. 661 Straight Line Inlaid—Heavy (1/8") Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only



No. 14160 Straight Line Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only



No. 14252 Straight Line Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

No. 14272 Straight Line Inlaid—Medium Gauge
(Plate shows approx. 1/4 scale) 2 yards wide only

ARMSTRONG'S LINOSETS FOR LINOLEUM FLOORS

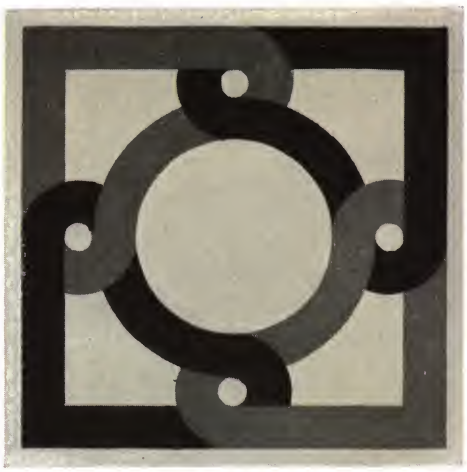
Ready-Cut Linosets are furnished in assembled units that can be quickly and easily inserted in new or old linoleum floors or in walls covered with Armstrong's Linowall. They make it possible to create distinctive floors at considerably less cost than when insets are specially designed and cut.

Ready-Cut Linosets may be used effectively with Plain, Jaspé, Marbelle, Monobelle, Embossed Inlaid, or Straight Line Inlaid Linoleum. They are furnished in Heavy ($\frac{1}{8}$″), Medium ($\frac{3}{32}$″), and Standard ($\frac{5}{64}$″) gauges, but may also be used with $\frac{3}{16}$″ or 6 mm. linoleum. Typical designs available include the anchor, compass, fish, and crossed arrows designs illustrated here. The "reverses" of these designs also are available. For example, the anchor design can be furnished with a blue anchor, white rope, tan field, and blue border; or with a tan anchor, white field, blue rope, and tan border.

Cut-to-Order Linosets. Where an entirely original design is wanted, it can be cut to order either by the linoleum contractor or at the Armstrong factory. Examples of this type of Linoset are illustrated on pages 12 and 13. The three designs at the bottom of this page are cut-to-order.

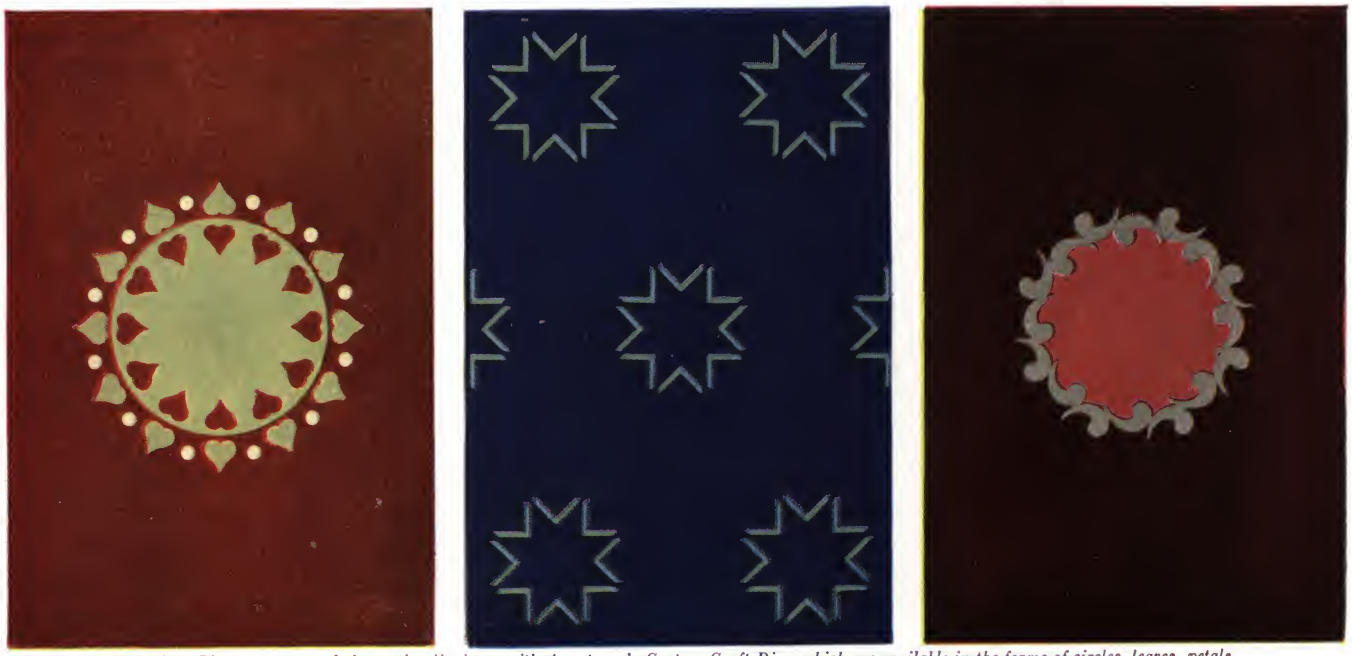
Anchor No. 934A
Field No. 30. Border No. 23. Design in Nos. 23 and 28. 24″ x 24″ in Heavy, Medium, and Standard.

Crossed Arrows No. 925B
Field No. 27. Design in Nos. 23, 25, and 45, Plain Linoleum. 18″ x 24″ in Heavy, Medium, and Standard.



Classic Circle Design No. 931C
Field No. 24. Design in Nos. 22 and 27. 24″ x 24″ in Heavy, Medium, and Standard.

Compass No. 933B
Field No. 29. Design in Nos. 23, 29, and 40. 24″ diameter in Heavy, Medium, and Standard.



These three Linosets were made by cutting linoleum with Armstrong's Custom-Craft Dies, which are available in the forms of circles, leaves, petals, chevrons, scrolls, stars, and rosettes. By combining these simple design elements, attractive floors can be produced at much less cost than hand cutting.

Special Borders—Almost any design that can be drawn can be executed as a border for Linoleum, Linotile (Oil-Bonded), Rubber Tile, Cork Tile, or Asphalt Tile. These designs can be cut from any color of linoleum or resilient tile. The cutting can be done by the flooring contractor, or the design can be cut to order at the Armstrong factory. Those shown here are suggestions and not stock designs. In creating such designs, it is well to make sure that all colors required are available in the gauge selected. Because all colors are cut simultaneously, it is often possible to economize by planning to use the reverses of the design for other areas.

Linoleum Borders—Battleship, Plain, Jaspé, Monobelle, and Marbelle, can be furnished in 90′ rolls 3″ to 36″ wide. Also ready-cut borders 6″, 9″, or 12″ wide in No. 27 Plain Black, and in No. 021 Marbelle in 1/8″, Medium, and Standard gauges.

Cork Tile Border Strips can be supplied in any width under 3″, and 18″ to 36″ long.

Linotile (Oil-Bonded) Borders can be supplied in any width from 1″ to 4″, in any length between 18″ and 36″.

Linostrips—Linostrips are narrow strips of linoleum or other resilient material. They are often laid between the border and the field as an accent; or they can be set several inches from the wall, so that the field material can serve as a border. Two or more Linostrips can be used for multiple borders, or as interliners.

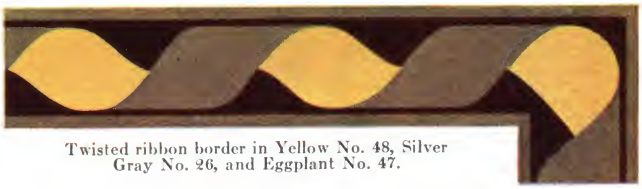
Linoleum or Linowall Strips—Any color or gauge of Battleship, Plain, Monobelle, or Marbelle Linoleum (as well as Linowall Nos. 700 to 708, and 731 to 738) can be supplied in strips 5/8″, 1″, or 1 1/2″ wide in 45′ rolls. Also 1/4″ strips of No. 46 Chocolate, 45′ long, in 3/16″, Medium, or Heavy gauge. Also 36″-wide rolls of No. 16 or No. 17 Jaspé in 3/16″, Heavy, or Medium gauge.

Asphalt Tile Strips can be supplied in 1″ x 24″ and 2″ x 24″, in 1/8″ or 3/16″ gauge, for installation as interliners.

Rubber Tile Strips can be supplied in any width from 1/4″ to 3″, in 36″ lengths.

Linotile (Oil-Bonded) Strips can be supplied 1/4″, 3/8″, 1/2″, 3/4″, and 1″ wide, for installation as interliners.

Laurel-leaf border executed in Jade No. 42 and White No. 23 Plain Linoleum.

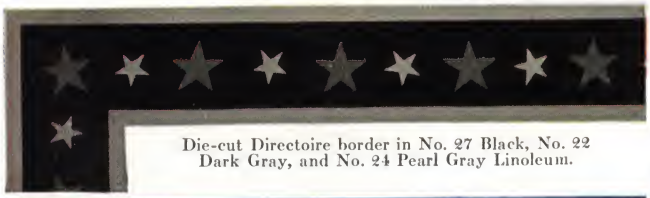


Twisted ribbon border in Yellow No. 48, Silver Gray No. 26, and Eggplant No. 47.

Design in No. 25 Terra cotta Linoleum with No. 23 White Linostrips.

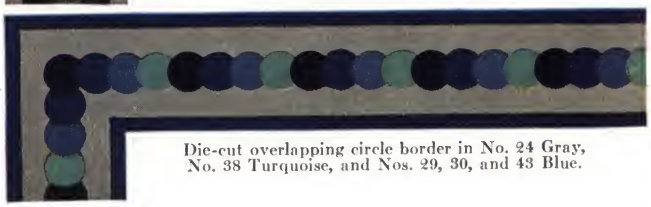
Floral die-cut border in No. 47 Eggplant, No. 39 Chinese Red, No. 40 Ruby, and No. 49 Coral.

Regency die-cut border in No. 29 Cadet Blue, No. 23 White, and No. 38 Turquoise Plain Linoleum.



Die-cut Directoire border in No. 27 Black, No. 22 Dark Gray, and No. 24 Pearl Gray Linoleum.

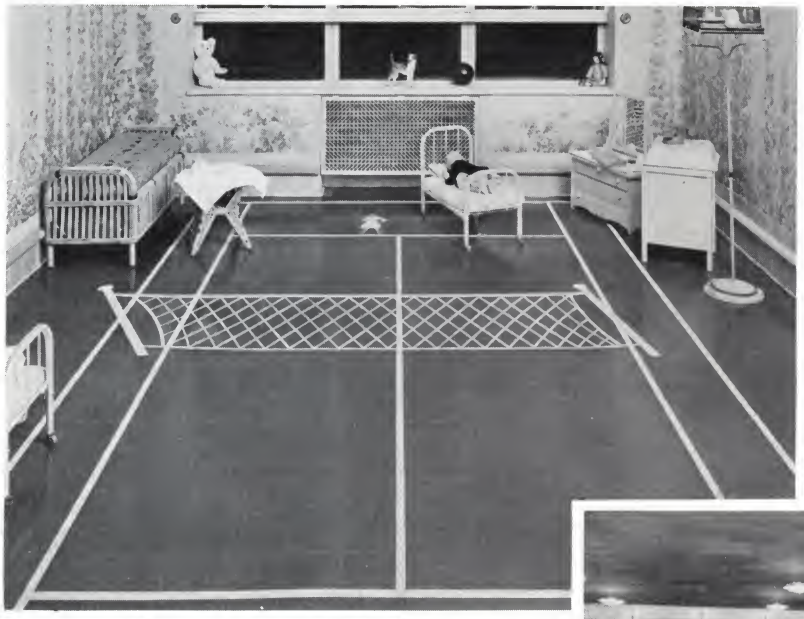
Hand-cut nail-head border in No. 25 Terra cotta, No. 22 Gray, No. 23 White, No. 26 Gray, No. 27 Black.



Die-cut overlapping circle border in No. 24 Gray, No. 38 Turquoise, and Nos. 29, 30, and 43 Blue.

Formal border in No. 33 Chartreuse, No. 45 Fawn, No. 25 Terra cotta, No. 46 Chocolate.

LINOLEUM • RUBBER TILE • LINOTILE (OIL-BONDED)



LEFT: *A field of green Linotile (Oil-Bonded) with a white tennis net and inset figures forms the floor in the playroom of Shriners' Hospital for Crippled Children, San Francisco. Linotile is ideal for areas exposed to severe traffic because it is even more resistant to indentation than Battleship Linoleum.*

ABOVE: *Architect Burnham Hoyt uses Armstrong's Cork Tile on the floors, columns, and wainscoting in the coffee shop of the Albany Hotel, Denver. The ceiling is Armstrong's Standard Corkboard Cork tile is an excellent wall covering.*

ABOVE: *Toy balloons and trade-mark are cut from a wide variety of Plain Linoleum colors and inset in a field of black linoleum in the Variety Club of the Belvedere Hotel, Baltimore. Floors like this have an advertising value in that they help make patrons remember and return.*

RIGHT: *Like linoleum, Armstrong-Stedman Reinforced Rubber Tile can be cut in intricate designs. In the Yacht Club, Denver, the inset wheel and rope border contribute to the nautical atmosphere. The field is No. 693 Turquoise. The wheel is No. 635 Light Mahogany and No. 607 Orange.*

CORK TILE • ASPHALT TILE • LINOWALL

ABOVE: *Asphalt Tile is the only type of resilient flooring recommended for below grade areas. In this Germantown, Pa., game room, the field is Pompeian red with azure and Spanish red insets.*

ABOVE: *Practically any design that can be drawn can be reproduced in linoleum, and this floor in a Piedmont Beach, Cal., school proves it. Field is No. 025 Blue Marbelle with Linosets in many Plain colors.*

RIGHT: *Walnut Linowall with chrome stripping as trim is used effectively on the desk and wall in this modern office. Floor is No. 29 Cadet Blue Linoleum.*

BELOW: *In this penthouse breakfast room, a field of plain green linoleum is encircled with a white border and green leaves. Borders of this kind can be cut to order by the linoleum contractor or at the Armstrong factory.*

BELOW: *On a field of No. 025 Marbelle Linoleum, lettering, nursery rhyme figures, rosettes, and Linostrips are employed by the Jack and Jill Shop, Madison, Wis. This floor was designed by the Armstrong Bureau of Interior Decoration, which will cooperate with architects and builders in planning distinctive designs for any type of interior.*

ARMSTRONG'S LINOTILE (OIL-BONDED)

Description—Linotile (Oil-Bonded), an exclusive Armstrong product, is a linoleum-like composition tile that is even more resistant to indentation than Battleship Linoleum. Dense but resilient, it consists of oxidized oil, powdered cork, and color pigments specially processed to give maximum service when used in tile form. Linotile should not be confused with linoleum cut into blocks.

Advantages—Linotile has all the beauty and other advantages of hard tile without the attendant disadvantages of coldness, hardness, and noisiness. The cork content and the oxidized oil give Linotile a springiness that makes it comfortable and practically noiseless under impact. It is remarkably durable, easy to clean, non-slippery if properly maintained, and simple to repair if damaged by some unusual accident.

Linotile will not splinter, crumble, or dust. For hospital use, it is particularly suitable because it is almost as impervious to X-rays as lead.

Linotile should not be used over concrete in direct contact with the ground, and it is not recommended for use in high-humidity climates.

Gauges—$\frac{1}{8}$″ and $\frac{3}{16}$″.

Border Strips—1″ to 4″ wide, and 18″ to 36″ long.

Interlining Strips—Strips $\frac{1}{4}$″, $\frac{3}{8}$″, $\frac{1}{2}$″, $\frac{3}{4}$″, and 1″ wide are available.

Diagonal Half Units—Cut diagonally from any regular square unit.

Linotile Beveled Edging, for finishing edges (as at doorways) of resilient floor materials, is available 1″ wide and 36″ long, $\frac{1}{8}$″ or $\frac{3}{16}$″ thick at one edge and tapering to approximately $\frac{1}{32}$″ at the other edge. All plain and marble colors. See page 39 for drawings and installation details.

Cove and Base—See page 24.

Specifications—See page 32.

SIZES

Squares:

2″, 3″, 4″, 6″, 8″, 9″, 12″, 18″, 24″, and 36″

Oblongs:

3″ x 6″	6″ x 18″
3″ x 12″	9″ x 18″
4″ x 16″	18″ x 36″
6″ x 12″	24″ x 36″
30″ x 36″	

Light Brown No. 62

White No. 21

Dark Brown No. 64

Red No. 10

Medium Green No. 73

Dark Silver No. 53

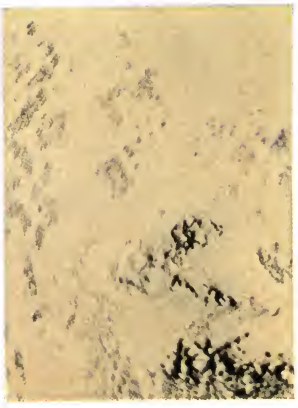
Dark Green No. 75

Chocolate No. 65

Black No. 30

Light Silver No. 51

Coral No. 113


Alabaster No. 111

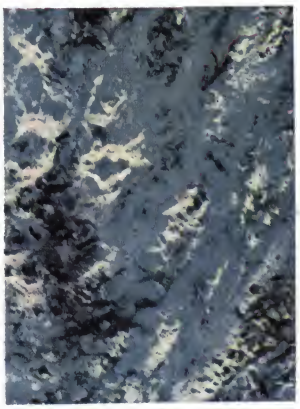
Travertine No. 115

Light Walnut No. 125

New Sienna No. 151

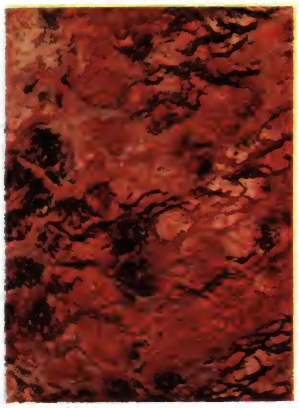
Dark Walnut No. 126

Ford Rotunda, Dearborn, Michigan, uses Linotile floors in special shades of Ford blue. Albert Kahn, Inc. specified 38,000 sq. ft. of Linotile flooring for this building.

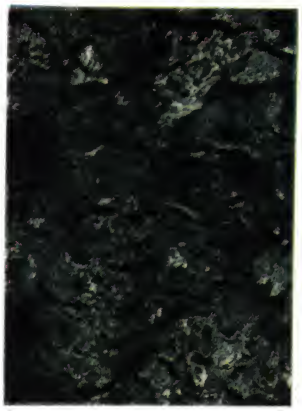


Empire Blue No. 166

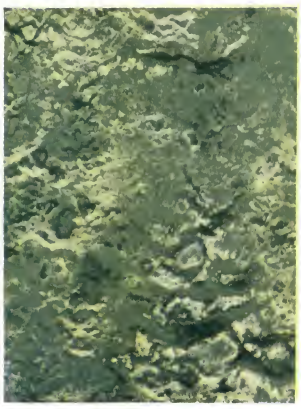
Silver Gray No. 147



Chinese Red No. 156



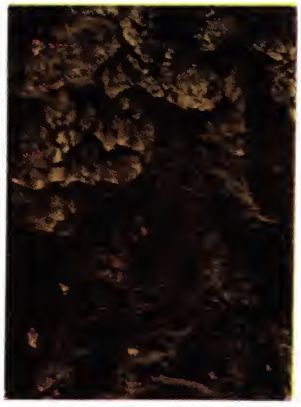
Marine Green No. 133



Spume Green No. 132

Jet Black No. 101

Algerian Red No. 155



Rust Black No. 103

ARMSTRONG-STEDMAN REINFORCED RUBBER TILE

Description—Armstrong-Stedman Reinforced Rubber Tile is manufactured with an invisible, interwoven fibre reinforcement that makes the tile more dense and more highly resistant to deterioration and abrasive effects of traffic. The reinforcement also adds to the tensile strength and prevents buckling or crazing due to seasonal contraction or expansion of the underfloor.

In addition, the reinforcing insures deeper graining and richer coloring because it prevents the pigments from flowing during manufacture. The fibres do not reduce the amount of rubber in each tile, but merely replace inert fillers, which are used in all rubber tiles.

Although this reinforcement is exclusive with Armstrong, it adds nothing to the cost of the material.

Colors—Plain, marble, paisley, and two-tone colors are available. In each unit, the coloring runs through the full thickness. Armstrong-Stedman Reinforced Rubber Tile is distinguished by its two-tone colors, an exclusive Armstrong feature developed to provide the decorative effect of solid colors at lower cost than with solid colors, which are more expensive to manufacture. Two-tone colorings tend to hide traffic marks.

Ease of Cleaning—Rubber Tile is a practical flooring because ink and other common liquids wipe up without stain, and burns from cigarettes and matches can be removed with exceptional ease. Washing should be done in accordance with the approved recommendations of the Rubber Manufacturers' Association, New York City. Rubber Tile should be maintained with Armstrong's Linogloss Wax.

Accessories—The usefulness of Armstrong-Stedman Rubber Tile is increased by a complete assortment of accessories, including a special hospital type cove and base designed for maximum sanitation and easy maintenance. See page 24.

Gauges—$\frac{1}{8}''$, $\frac{3}{16}''$, $\frac{1}{4}''$ (all colors).

Diagonal Half Units of sizes below are available.

Feature Strips (maximum length 36″; $\frac{1}{4}''$ to 3″ wide) can be supplied with square or rounded edges.

Specials—Any square or rectangular piece of $\frac{3}{16}''$ or $\frac{1}{4}''$ material larger than 36″ x 36″ can be supplied in sizes up to 36″ x 15′10″. Maximum size of $\frac{1}{8}''$ material is 36″ x 36″. Also irregular shapes and units with cut corners.

Cove Base and Accessories—Rubber Tile can be used with Armstrong's Flash Type Cove and Base; Armstrong's Asphalt Tile Base; or Armstrong's Rubber Cove Base (sanitary, hospital, or utility type). Cove base, corners, end pieces, plinth blocks, stair treads, risers, thresholds, and other accessories are shown on page 24.

Specifications—See page 32.

SIZES

Squares:
3″, 4″, 6″, 9″, 12″, 36″

Oblongs:
3″ x 6″ 6″ x 12″
9″ x 18″

Grape No. 585

Robin's Egg No. 576

Lichen No. 553

Malacca No. 565

Topaz No. 538

Etruscan No. 533

White No. 531

Wedgwood Blue No. 508

Shrimp No. 534

Myrtle Green No. 586

Quaker Gray No. 510

Mocha No. 535

Copper Leaf No. 537

Gun Metal No. 559

White Sapphire No. 675

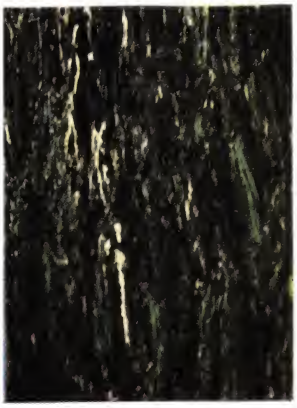
Sapphire No. 677

Armstrong-Stedman Reinforced Rubber Tile No. 673 Black Red forms a serviceable, attractive floor in the reception room of Batten, Barton, Durstine, & Osborn Advertising Agency. The invisible interwoven reinforcing prevents buckling or crazing due to the seasonal expansion or contraction of subfloors.

Black White No. 613

Red Gold Paisley No. 688

Black Gold Paisley No. 640

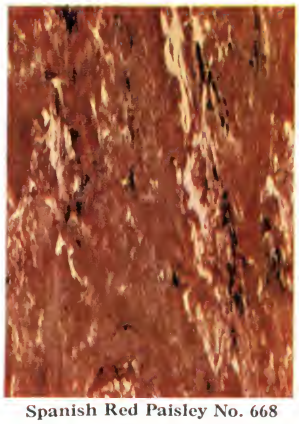


Verde Antique No. 650

Two-Tone Brown No. 601

Plain Black No. 695

Black Red No. 673



Spanish Red Paisley No. 668

ARMSTRONG-STEDMAN REINFORCED RUBBER TILE

Two-Tone Blue No. 608

Two-Tone Gray No. 606

Two-Tone Orange No. 607

Two-Tone Green No. 603

Two-Tone Orchid No. 605

Two-Tone Tan No. 602

Antique Red No. 685

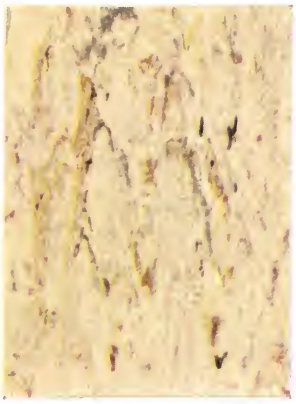
Sea Green White No. 678

Escalette No. 620

Walnut Paisley No. 690

Slate Red Paisley No. 683

White Sea Green No. 643


Ivory Antique No. 618

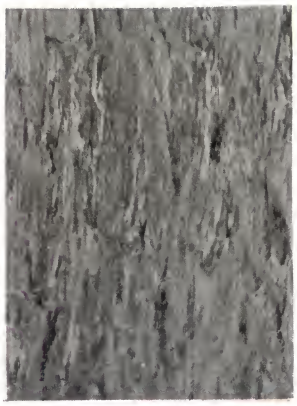
Napoleon Gray No. 625

Travertine No. 628

Mother-of-Pearl No. 623

White Black No. 653

Silvertone Gray No. 655


Platinum Gray No. 658

Pink Tennessee No. 680

Light Gold No. 660

Indian Red Paisley No. 670

Brown Gold Paisley No. 663

Oyster No. 615

Light Jade No. 645

Ivory No. 610

Light Mahogany No. 635

Green Paisley No. 648

Dark Mahogany No. 638

Turquoise No. 693

Light Oak No. 630

Dark Oak No. 633

ARMSTRONG'S ASPHALT TILE

Description—Asphalt Tile is the only type of resilient flooring that should be used on concrete subfloors in direct contact with the ground, on or below grade. (It should not be installed on subfloors that are subject to hydrostatic pressure.)

Armstrong's Asphalt Tile (formerly called Accotile) is made of high quality, inert raw materials—asbestos fibre, mineral pigments, and asphaltic or resinous binder. It is fire-resistant, odorless, resistant to mild alkaline or acid substances, and good as an electrical insulator. Even under heavy traffic and severe conditions, Asphalt Tile resists abrasion, indentation, and shock. It does not disintegrate or crumble. However, it should not be used where it will be exposed to greases, organic solvents, strong acids, or strong alkalis.

For special applications, Armstrong's Industrial Asphalt Tile is available. See page 28 for details.

SIZES

Squares:
3″, 6″, 9″, 12″

Oblongs:

3″ x 6″	9″ x 18″
6″ x 12″	12″ x 24″
6″ x 24″	18″ x 24″

Colors—Asphalt Tile is available in plain and marble colors. In the marbles, the non-directional swirl graining—an exclusive Armstrong feature—hides wear and traffic marks. The colors run through the full thickness of the material.

Low Cost—Asphalt Tile is a low-cost material. Its economy and its moisture-resistance make it an ideal flooring for basement recreation rooms.

Gauges—All colors and sizes in $\frac{1}{8}$″, $\frac{3}{16}$″, and $\frac{1}{4}$″. Special $\frac{3}{8}$″ gauge to order.

Feature Strips—1″ x 24″ and 2″ x 24″ in $\frac{1}{8}$″ or $\frac{3}{16}$″ gauge, any color.

Diagonal Half Units—Cut from 6″, 9″, or 12″ squares, all gauges and colors.

Cove Base—See page 24.

Specifications—See page 32.

Scotch Gray No. 260

Buff No. 248

Willow Green No. 250

Azure Blue No. 235

Regal Blue No. 231

Rose No. 203

Spanish Red No. 205

Pompeian Red No. 200

Mahogany No. 220

Light Green No. 257

Dark Green No. 251

Saddle Tan No. 247

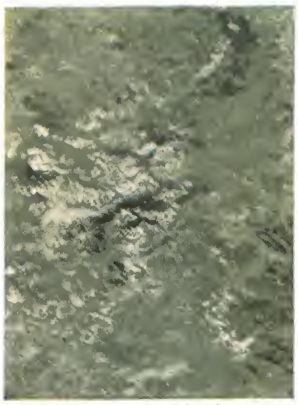
Malay Brown No. 241

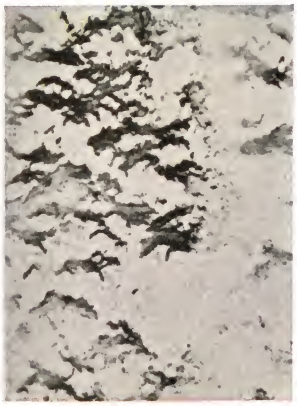
White No. 270

Steel Gray No. 266

Lead Gray No. 261

Black No. 210


Jade Green Marble No. 310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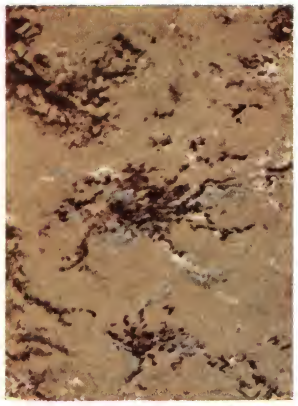
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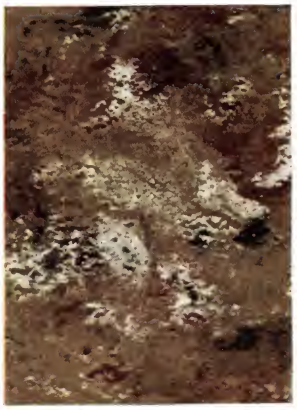
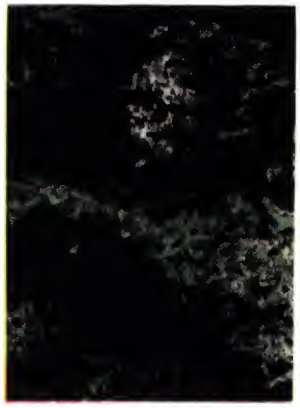
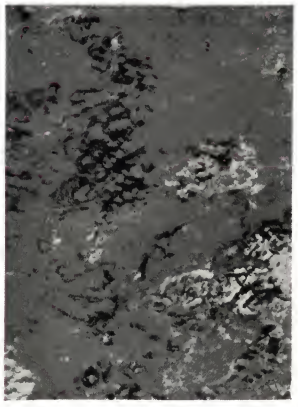

Clay Brown Marble No. 330

Travertine Marble No. 340

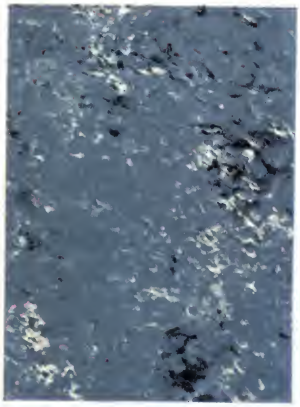
Sea Green Marble No. 315

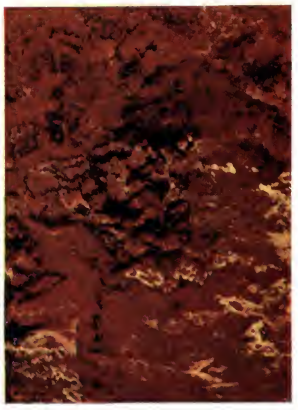

Antique Green Marble No. 335


Slate Gray Marble No. 345

Black Gold Marble No. 360

Tennessee Marble No. 342

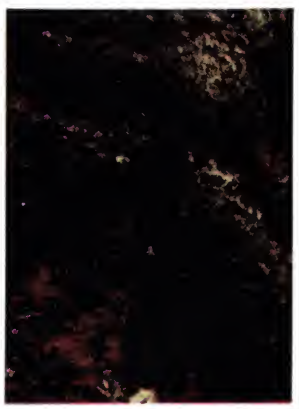

Delft Marble No. 355


Florentine Marble No. 322

Venetian Red Marble No. 320

Ebony Marble No. 305

Cinnabar Marble No. 324


Cordovan Marble No. 350

ARMSTRONG'S FLORMASTIC, UNDERLAYMENT, AND MONOCORK

FLORMASTIC

For Industrial Cold Mastic Floors

Description—Armstrong's Flormastic is an emulsion of asphalt in water, suitable for the construction of industrial cold mastic floors, and for patching concrete floors. The asphalt in Flormastic has a relatively high melting point. Therefore Armstrong's Flormastic provides for much better coating of the aggregate and more uniform distribution of the asphalt in the mixture.

Industrial cold mastic floors made with Flormastic are suitable, over any type of rigid sub-construction, for loading platforms, warehouse floors, trucking aisle ways, or factory areas. These floors should not be installed where they will be exposed to excessive oil, grease, or continuous wetting; nor in dairies and other places where they would normally come in frequent contact with either organic or inorganic acids.

Specifications—See page 36 for installation details.

UNDERLAYMENT

For Leveling Subfloors

Description—Armstrong's Underlayment provides an easy, economical method of leveling subfloors for the reception of Armstrong's Linoleum, Cork Tile, Rubber Tile, Asphalt Tile, and other resilient floorings. It is supplied partially pre-mixed, so that time is saved on the job and accurate proportions are assured under all conditions.

Asphalt Tile may be installed over Armstrong's Underlayment on concrete floors in direct contact with the ground, on or below grade; although the permanency of the fill cannot be guaranteed if an excessive moisture condition exists.

Specifications—See page 36 for installation details.

MONOCORK

For Underlayment, Finish Flooring, and Adhesive

Description—Monocork is a cork-and-rubber composition that may be used as an underlay, as finished flooring, or as an adhesive for bonding materials to clean steel, concrete, masonry, composition boards, or wood. It is resilient, non-slippery, and water-resistant. Consisting of rubber latex, a dehydrating powder, granulated cork, and fillers, it is mixed on the job and troweled over the surface.

For special applications, the percentage of cork granules may be increased to make the floor light in weight and relatively non-slippery when wet or dry. The rubber content of Monocork is high enough to make it flexible, so that when it is applied as a monolithic surface, it will withstand considerable distortion before cracking or breaking.

The combination of cork and rubber results in a surface that is resilient, quiet, and resistant to wear and moisture.

The natural color of Monocork is dark gray to black, but it can also be supplied in maroon, brown, and battleship gray for special installations.

Monocork was developed by Armstrong's British subsidiary and is known in foreign countries as "Aranbee" or "Plasco." It has been installed on the entire deck areas of the "Queen Mary" and will be installed on the "Queen Elizabeth." It has also been used on several British Admiralty ships, and on American Navy destroyers, Army transports, Coast Guard ships, and other vessels. In the marine field, it has been used as a subfloor between the steel deck and the linoleum or rubber tile finished flooring, and also as a finished flooring itself.

At the New York World's Fair, it is being used as the road paving material for the "Road of Tomorrow" on the Ford Exposition Building; also as a pavement for the Helicline or ramp leading from the Perisphere; and as an exterior wall covering on the National Cash Register Company's Exposition Building.

For general construction, Monocork will be sold and installed by selected and authorized contractors of the Armstrong Cork Company. For marine construction, it is sold under the name "Foranaft" by Selby-Battersby Company, Philadelphia. It is also sold for marine use by Van Fleet-Freear Company, San Francisco, under the name of Monocork.

Specifications are not included in this catalog because Monocork's composition may be varied to suit individual requirements. Complete details will be furnished upon request. Please supply all pertinent data on the job.

Description—Armstrong's Cork Tile is made from high-grade pure cork shavings compressed and baked in molds. The natural gums in the cork bind the particles together, producing a closely knit, long-wearing tile with great resistance to abrasion and shock. Cork Tile will not "dust" or crumble. It is not unduly slippery even when laid on inclines. It is quiet under footsteps or impact. It is resilient and comfortable underfoot. It is durable and, if kept properly finished, can be used in areas exposed to considerable traffic.

Beveled and Standard (unbeveled) Units can be supplied. With unbeveled Cork Tile, sanding the finished floor is usually necessary to offset unevenness of the subfloor. Beveled Cork Tile conceals irregularities and eliminates sanding. It is also used on walls, where sanding would be difficult.

Finish—After installation, Cork Tile should be given one brush coat of Armstrong's Cork Tile Sealer followed by one coat of Armstrong's Cork Tile Undercoat, and one coat of Linogloss Wax, unless it is beveled tile that has been ordered finished at the factory. The undercoat should be thoroughly buffed with a floor machine before waxing. For subsequent maintenance, use Linogloss.

Gauges—$\frac{5}{16}$″ and $\frac{1}{2}$″.

Border Strips—Up to 3″ wide, and 18″ to 36″ long.

Beveled Border Units—Supplied with bevel on one edge.

Diagonal Half Units—Cut diagonally from any regular square unit.

Cove and Base—Cork Tile Cove and 4″ or 6″ high Cork Tile Base in $\frac{1}{2}$″ or $\frac{5}{16}$″ gauge. Special heights to order. See page 24.

Specifications—*Floor*, page 32. *Walls and Wainscoting*, page 39.

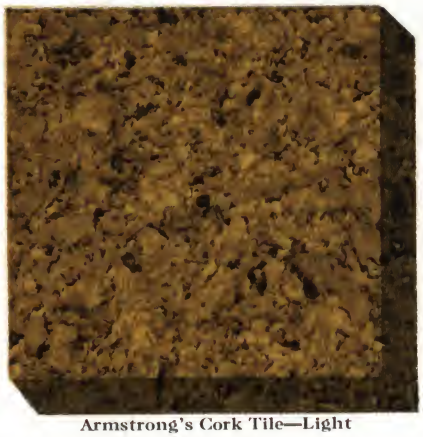
Note: Not recommended where dirt, foods, greases, or other unsanitary materials may be spilled, or for excessive gritty abrasive traffic. Spread point loads with wide furniture rests or suitable bases.

SIZES

Squares:
2″, 3″, 4″, 6″, 9″, 12″

Oblongs:

2″x 6″	4″x12″	9″x18″
2″x 9″	6″x 9″	9″x36″
3″x 9″	6″x12″	12″x18″
3″x12″	6″x18″	12″x24″
3″x36″	6″x36″	12″x36″



Armstrong's Cork Tile—Light

Armstrong's Cork Tile—Medium

Armstrong's Cork Tile—Dark

Armstrong's Cork Tile Design No. 710
Consists of: Medium Shade and Dark Shade Cork Tile.

Armstrong's Cork Tile Design No. 760
Consists of: Light Shade, Medium Shade, and Dark Shade Beveled Cork Tile.

Armstrong's Cork Tile Design No. 740
Consists of: Light Shade, Medium Shade, and Dark Shade Cork Tile.

COVE AND BASE TREATMENTS FOR RESILIENT FLOORING

Cove and Base—Armstrong offers four types of cove and base: (1) Flash Type; (2) Rubber; (3) Cork Tile; (4) Asphalt Tile. Dimensions and details are given in the adjoining column.

Flash Type Cove and Base—With this type, linoleum of 1/8" gauge or less, in any pattern, is coved over Armstrong's 3/4" radius Wax Fillet Strip (a fabric-covered plastic core supplied in 50' rolls) up to a metal binding strip, which is nailed to the wall. The fillet strip forms a solid backing and is not affected by moisture. With linoleum flooring, the field or border can be run unbroken up to the binding strip. This construction is extremely sanitary.

Inside and outside metal corner pieces 4½" or 6" high; right or left end stops 4½" or 6" high; and metal binding strip are furnished in brown, black, ivory, buff, green, orchid, blue, or chromium to harmonize with, but not to match, the coved linoleum.

The metal parts and fillet strip used for Flash Type Cove and Base may also be used on linoleum sink tops where the linoleum is coved up the wall. See page 28 for data on sink tops.

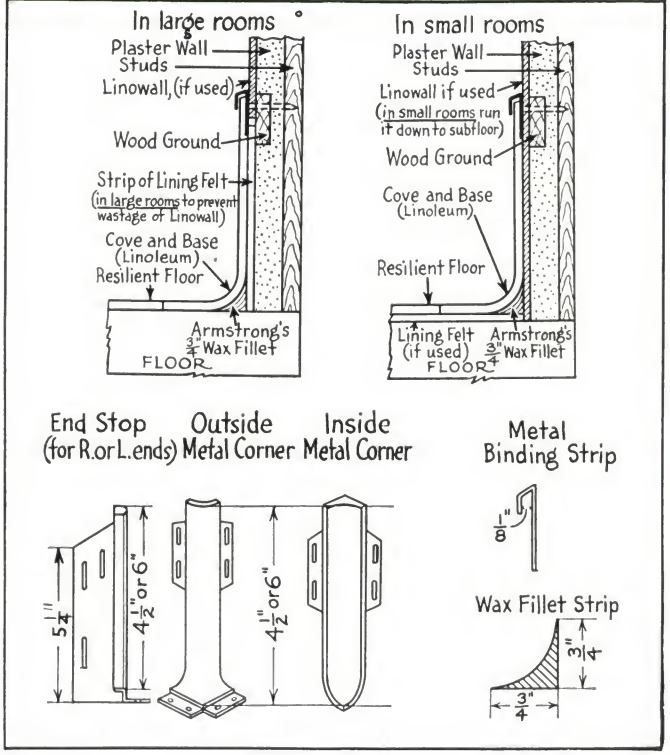
Rubber Cove Base and Accessories—Three types of molded rubber cove base, supplied in all standard Armstrong-Stedman Rubber Tile colors, are available with suitable corner pieces, end pieces, plinth blocks, stair treads, risers, threshold, and wainscot caps. The Sanitary Type Cove Base is available in flexible material, 4" or 6" high but with 5/32" back only.

Cork Tile Cove and Base—Cork Tile bases, 4" or 6" high, and Cork Tile coves are available for 1/2" or 5/16" Cork Tile flooring in Light, Medium, and Dark Brown.

Asphalt Tile Cove Base—Plain black only; 4" or 6" high; 5/16" radius; 1/8" or 3/16" lip. Inside and outside corner pieces. No end stops.

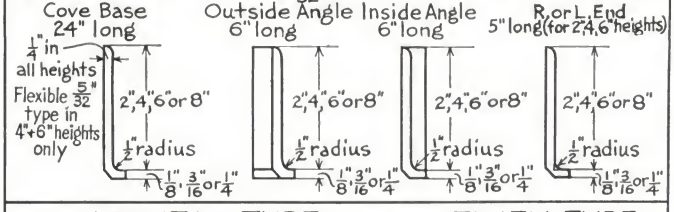
If color is desired, use Armstrong-Stedman Rubber Cove Base or slabs of 6" x 24" Asphalt Tile in the colors shown on pages 20 and 21. Slabs are installed as shown in the adjoining column.

FLASH TYPE COVE AND BASE

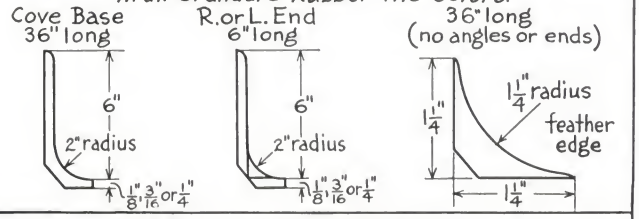


RUBBER COVE BASE

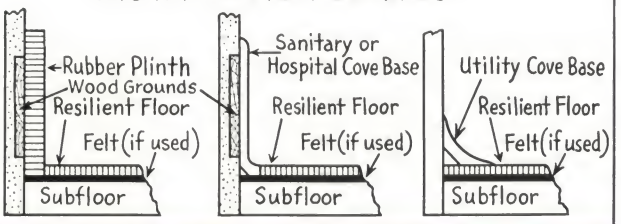
SANITARY TYPE *in all Standard Rubber Tile Colors.*
1/4" thick back in all heights, 5/32" thick back in 4" and 6" heights only.



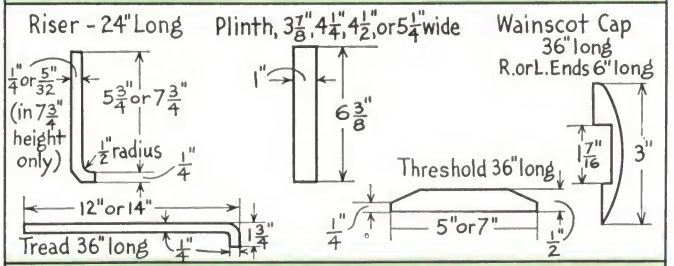
HOSPITAL TYPE ◦ ◦ ◦ UTILITY TYPE
in all Standard Rubber Tile Colors.



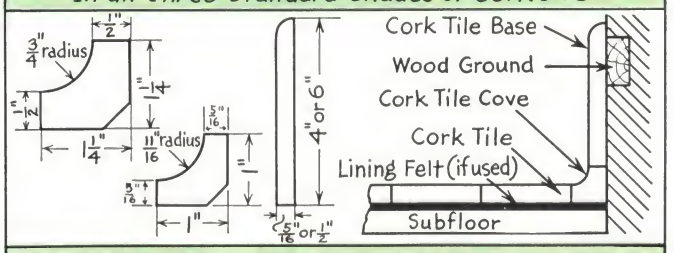
INSTALLATION DETAILS



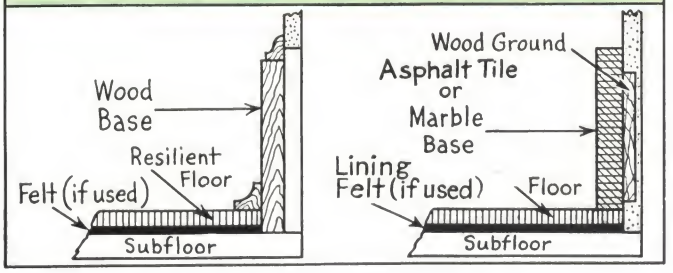
RUBBER ACCESSORIES
In all Standard Rubber Tile Colors



CORK TILE COVE AND BASE
In all Three Standard Shades of Cork Tile



WOOD, ASPHALT TILE, OR MARBLE BASES



Description—Linowall wall covering is a resilient linoleum-like composition with a flexible fabric backing. Its smooth, heavy facing of inlaid color is 1/20″ thick. This assures greater durability than materials with a film finish only a few thousandths of an inch thick. (Floor linoleum is not recommended for walls.)

Durability—Linowall is resilient and does not chip or crack when bumped. It withstands moderate settling of walls without cracking or buckling. Surface moisture does not injure it; and the seams can be waterproofed.

Economy—At about half the cost of tile, Linowall offers many qualities not obtainable in other permanent materials. It can be formed without seams around inside and outside corners. It does not have to be periodically replaced or refinished. Dirt, grease, and smoke or water marks can be easily removed with a damp cloth.

Special Designs—Linowall can be inlaid or appliqued with designs in metal, wood, glass, and carved or sandblasted linoleum. Linoleum insets can be cut to order.

Ceilings—By coving it over Armstrong's 3/4″ Wax Fillet Strip, Linowall can be run up the wall and onto the ceiling without seams. Standard moldings also may be used.

Colors—Linowall is offered in the patterns illustrated.

Sizes—See table on page 26.

Accessories—(See drawings, page 39.) Armstrong's Metal Cap Strip (72″ lengths) and Concave (5/8″ radius) and Convex (5/8″ or 1″ radius) Metal Corner Pieces are available in green, ivory, buff, blue, orchid, brown, black, and chromium finish. For patterns in the 750 Series, use convex corners of 1″ radius. For all other patterns, use 5/8″-radius convex corners. The 5/8″-radius concave corners are for all patterns.

Linoleum Cap Strip for Linowall, 1/8″ thick by 1 1/2″ wide, is furnished beveled two sides in 30′ lengths. Colors: No. 021 Black Marbelle Linoleum, No. 032 White Marbelle, and Plain Colors No. 20 Brown, No. 23 White, No. 27 Black, No. 30 Midnight Blue, No. 42 Jade, No. 43 Oriental Blue, No. 49 Coral.

Linowall Fillet Strip (5/8″ radius) is supplied in 50′ rolls for curving Linowall over concave wall corners.

Linostrips—5/8″, 1″, or 1 1/2″ wide and 45′ long in Nos. 700 to 706, and Nos. 731 to 738.

Specifications—See page 36.

No. 900 Knotty Pine Linowall is used effectively in this nautical bunk room for youngsters. The floor is Armstrong's No. 11 Marine Blue Jaspé Linoleum with Ready-Cut Compass Linoset No. 933B. Linowall is moisture-proof and washable, never requiring costly, periodic refinishing.

ARMSTRONG'S LINOWALL

No. 707 Mother-of-Pearl
1 and 2 yards wide

SIZES

All patterns except No. 900

Rolls—3′ or 6′ wide

Strips—3′ or 6′ wide by 4½′ or 9′ high

Pattern No. 900

Rolls—6′ wide

Strips—6′ wide by 4½′ or 9′ high

No. 708 Primrose
1 and 2 yards wide

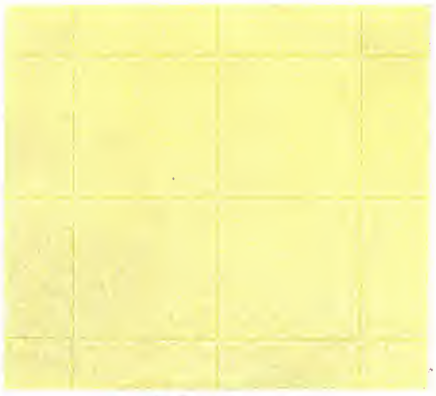
No. 738 Sage Linowall
1 and 2 yards wide

No. 705 Peach Linowall
1 and 2 yards wide

No. 737 Parchment Linowall
1 and 2 yards wide

No. 735 Pine Linowall
1 and 2 yards wide

No. 752 Ivory Linowall
1 and 2 yards wide



No. 750 Yellow Linowall
1 and 2 yards wide

No. 753 Green Linowall
1 and 2 yards wide

No. 754 Rose Linowall
1 and 2 yards wide

No. 751 Blue Linowall
1 and 2 yards wide

No. 731 Colonial Blue Linowall
1 and 2 yards wide

No. 900 Knotty Pine Linowall
2 yards wide

No. 732 Dove Gray Linowall
1 and 2 yards wide

No. 700 Green Linowall
1 and 2 yards wide

No. 702 Travertine Linowall
1 and 2 yards wide

No. 733 Mulberry Linowall
1 and 2 yards wide

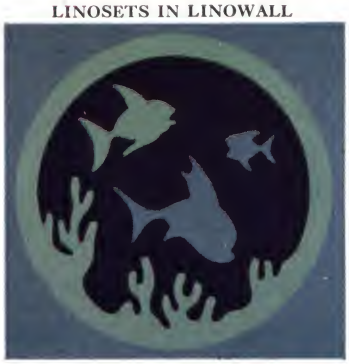
No. 706 Tan Linowall
1 and 2 yards wide

No. 704 Ivory Linowall
1 and 2 yards wide

No. 734 Canary Linowall
1 and 2 yards wide

No. 736 Walnut Linowall
1 and 2 yards wide

LINOSETS IN LINOWALL



Armstrong's Ready-Cut Linosets, page 10, may also be used with Linowall.

No. 703 Black Linowall
1 and 2 yards wide

OTHER PRODUCTS

Inlaid Linoflor consists of a linoleum-type "mix" keyed to an asphalt-saturated felt backing instead of burlap. It is an inexpensive flooring for rented property, temporary quarters, or other places where an investment in long-lasting Inlaid linoleum might not be justified. It is a resilient, durable, genuine inlaid material available in attractive patterns for a wide variety of purposes. It is installed in the same manner as linoleum (See Specifications, page 32.) except that it can be pasted direct to wood subfloors, without using lining felt.

Armstrong's Cork Carpet is made of relatively large granules of cork and forms a quiet, resilient floor for churches, libraries, and other places where traffic is neither constant nor excessive, and where dirt is not tracked in in large quantities. It is excellent material for indoor tennis courts, gymnasiums, and running tracks. It is not recommended for kitchens, bathrooms, or other places where water is likely to be spilled.

Cork Carpet is furnished in No. 31 Brown and No. 32 Green in ¼″ gauge, in rolls 2 yds. wide. In ordering, specify Armstrong's Unpolished Cork Carpet. It is installed in the same manner as linoleum (See page 32.).

Felt-Cushion Mastic Tile—This product consists of a calendered mix keyed to a backing of asphalt-saturated felt. The overall gauge is .080″. Felt-Cushion Mastic Tile may be installed on areas directly on grade but not below grade. It is particularly well suited for uneven suspended concrete or wood subfloors where the unevenness of the finished floor will not be objectionable. The extreme flexibility of the product permits its application on uneven subfloors which are too rough to receive other types of resilient flooring material.

Felt-Cushion Mastic Tile is installed in the same way as Mastic Armoflor. See specifications on page 32 and Table II on page 34.

Felt-Cushion Mastic Tile is available in four plain colors: red, green, black, and brown.

Sizes: 9″ x 9″, 9″ x 18″, 12″ x 12″, 18″ x 18″, 18″ x 24″. Diagonal half units 9″ x 9″, 12″ x 12″, 18″ x 18″. Also 1″ feature strips.

Industrial Asphalt Tile is a heavy-duty flooring suitable for installation on factory or warehouse floors which are subject to the severe traffic of trucking. The product may be used on concrete floors on grade, as well as on suspended wood and concrete subfloors.

Industrial Asphalt Tile is installed in the same way as Armstrong's Asphalt Tile, except that it is not recommended for installation on below-grade subfloors.

Gauges—½″ and ¼″.

Sizes—12″ x 12″ and 12″ x 24″.

Colors—Plain black and plain red.

Armstrong's Floor Fill should be used, as indicated in the specifications, for leveling uneven suspended wood or suspended concrete subfloors. Where the floor fill is to be less than ¾″ deep, use three volumes of clean sand, 1½ volumes Armstrong's Topping Cement, one volume portland cement. Where a fill ¾″ or greater is required, use three volumes of ½″ crushed stone or gravel, three volumes of clean sand, two volumes of Armstrong's Topping Cement, and one volume of portland cement. Complete specifications for the use of Armstrong's Floor Fill will be furnished upon request.

Cork Bulletin Boards are available in wood-back and burlap-back types. The former consists of a layer of ¼″ thick cork composition mounted on a ¼″ compo board. It is supplied in standard 4′ panels up to 14′ long, which can be sawed into small units on the job or at the factory. The burlap-type has no wood backing and can be supplied in any length up to 85′ and in any width up to 72″. Larger sizes are furnished in sections.

Both types are available in No. 34 Brown, No. 35 Tan, and No. 36 Green.

Horizontal grounds should be provided at the top and bottom. The grounds should be 2″ high and at least ⅞″ thick. Vertical grounds should be provided at the ends and at points where sections of bulletin board meet.

Bulletin boards or tack strip boards should be pasted to the plaster and wood grounds with Armstrong's No. 236 Waterproof Cement. They should also be nailed to the grounds and finished with wood or metal moldings.

Linoleum Sink Tops and Drainboards—Linoleum forms an attractive and practical surface for sink tops, counters, tables, desks, and cabinets. Because it is resilient, it reduces clatter and retards breakage of dishes.

On sinks or other areas where water is spilled or splashed, the success of the installation depends almost entirely upon the quality of workmanship in making the seams and edges tight and waterproof. Due to the fact that there are so many types of sink pans and metal edgings available, and that there are various systems of construction, Armstrong has not developed a specification for this type of work. The manufacturers of these metal parts, however, almost always can furnish drawings showing the method they recommend. The names of such firms will be furnished upon request or may be found in other sections of *Sweet's Architectural Catalog*.

In general, the use of Armstrong's No. 210 Rustproof Cement and Armstrong's Sink Top Lining is desirable. Where the linoleum is to be flashed up the wall, essentially the same construction as is employed for Armstrong's Flash Type Cove and Base may be used. That is, the wax fillet strip is used at the junction of the sink and wall; and the metal binding strip, end stops, and corner pieces are used as required.

For the convenience of architects, we have assembled the various drawings of sink pan and edging manufacturers into a portfolio. Copies of this will be furnished without charge. Ask for *Armstrong's Sink Top Portfolio.*

With proper maintenance, Linotile (Oil-Bonded) is used successfully for work surfaces, usually over a 5-ply plywood base, with metal edgings or wood aprons.

Description—Monowall is a beautiful, modern finish having many valuable qualities for use on walls and ceilings of homes and for commercial interiors. It is a factory-finished, durable, wood fibreboard available in 32 patterns in Tile-Designs, Marble-Designs, Plain Colors, and Wood-Designs. Monowall's high-gloss finish is tough and will not crack, craze, or peel.

Panel Sizes—Monowall panels are 4′ x 4′ to 4′ x 12′ and $\frac{1}{8}$″ thick in Plain Colors and Tile-Designs. In Marble-Designs and Wood-Designs, sizes are 4′ x 8′ to 4′ x 12′ and $\frac{1}{8}$″ thick, and the designs run the 4′ way of the panel. Panels 32″ x 48″ x $\frac{3}{16}$″ are also available in the Marble-Designs and the Wood-Designs.

Uses of Monowall—In a home, Monowall is especially suited to the kitchen and bath and is frequently used for an entry hall, game room, den or dining-room. For commercial interiors, Monowall can be used to special advantage in stores, restaurants, theatres, taverns, hotels, banks, offices, beauty parlors, barber shops, and for display work. It is well suited for use as a counter front or bar front but not as a counter top or table top.

Advantages—Typical advantages of Monowall are its fine appearance, ease of care, durability, light weight, variety of patterns, large panel sizes, speedy application, and moderate cost. The factory finish on Monowall permits immediate use following installation.

Monowall is well adapted for use in either new construction or remodelling. Old walls are generally a satisfactory base for the application of Monowall and it conceals cracks and scars. The light weight of Monowall is of particular advantage in remodelling because it can be used safely without requiring the addition of structural strength to the building. Monowall wainscoting for an average bathroom weighs less than 150 lbs.

Monowall's ease of cleaning and its excellent resistance to water makes it particularly valuable for use in rooms such as kitchen and bath, and in restaurants and other commercial interiors where frequent wiping and cleaning are required. For ordinary cleaning Ivory soap and water are satisfactory and frequently wiping with a damp cloth is sufficient. Monowall is often used for lining walls around tub showers, wash bowls, and areas similarly exposed to water. A specially designed metal channel strip and suitable cements prevent water from getting back of Monowall when it is used around a built-in bathtub.

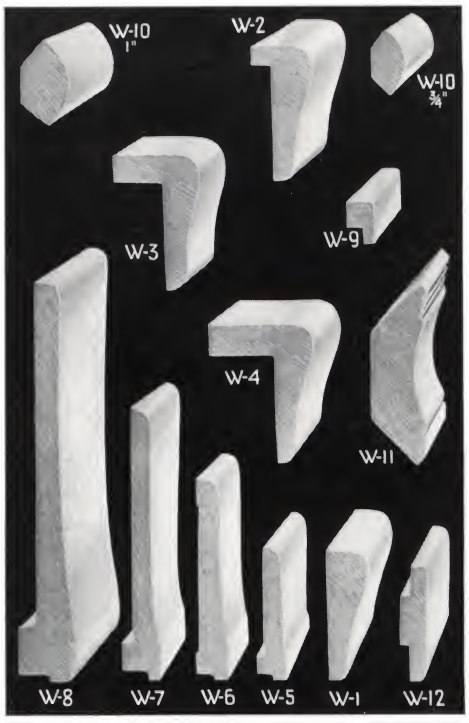
Installation—Any reasonably careful and experienced workman or carpenter or mechanic can install Monowall successfully. A wainscoting type of Monowall installation for a small room is usually completed in a day. A minimum of fuss or disturbance is involved. For best appearance and for permanence, Monowall should be applied with Armstrong's CM-50 Cement. Any base over which Monowall is applied must be dry, firm, clean, free from dust, and reasonably smooth or level. Do not apply Monowall on a surface which is likely to become wet, such as a porous wall below grade.

Monowall may be applied with CM-50 Cement against one- or two-coat plaster (old or new), gypsum lath, gypsum board, hardboard, wood, plywood, or finished concrete. Do not apply Monowall directly on studding but install a continuous surface base.

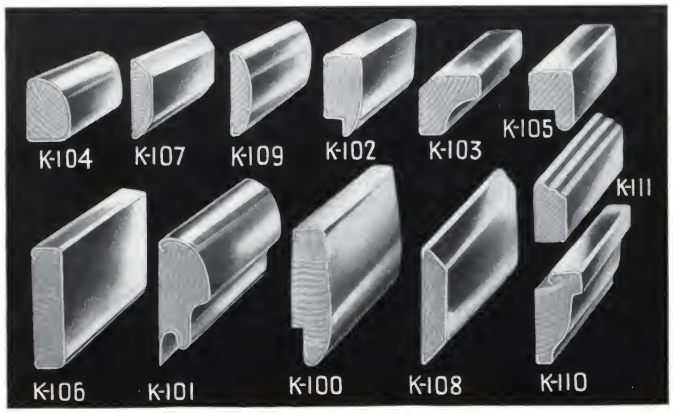
Moldings and Channels—All joints between Monowall panels are finished with connecting moldings or channels of special design. Base molding of wood and cap moldings of wood or metal are also required. The connecting moldings are generally not nailed in place, but left loose so that any settling or movement of the walls can readily be taken up. Base and cap moldings should be nailed to the wall but not to the Monowall. A special channel is designed for use around a built-in bathtub. See page 39.

Any special problems in the installation of Monowall should be referred to our nearest office.

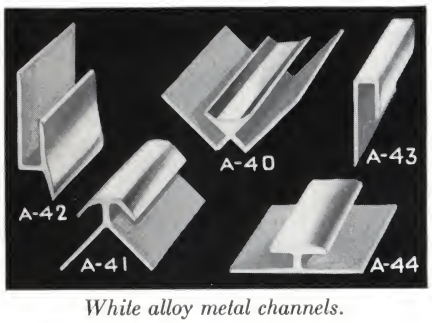
Specifications—See page 38.



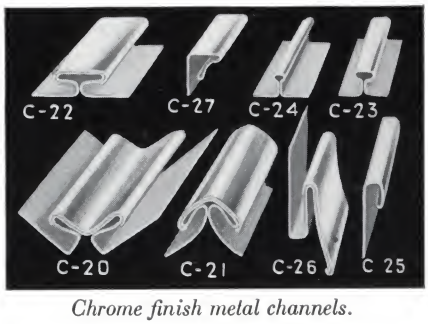
Painted wood moldings.



Chrome metal finished wood moldings.



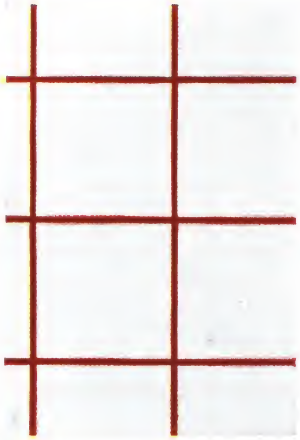
White alloy metal channels.

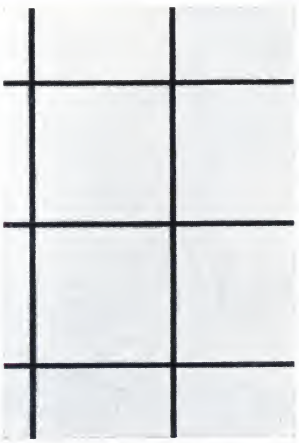


Chrome finish metal channels.

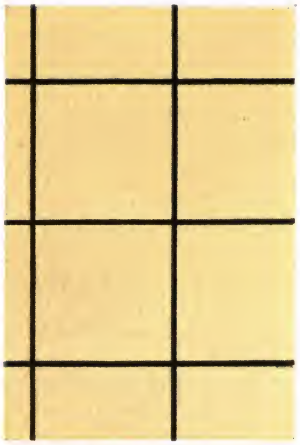
ARMSTRONG'S MONOWALL

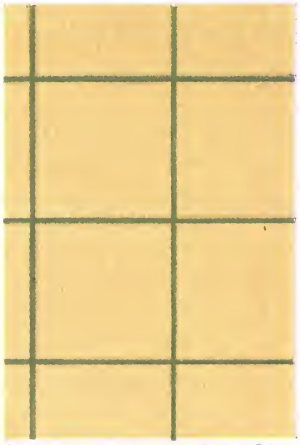
No. 110 White—Warm Gray Line

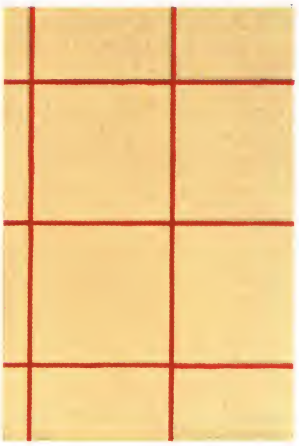

No. 120 White—Chinese Red Line


No. 130 White—Black Line

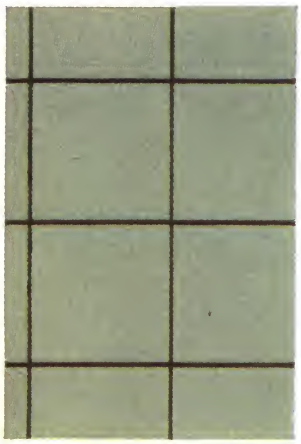
No. 210 Ivory—Warm Gray Line


No. 220 Ivory—Black Line


No. 230 Ivory—Apple Green Line


No. 240 Ivory—Chinese Red Line

No. 310 Nile Green—Ivory Line


No. 320 Ocean Green—Olive Line

No. 410 Chinese Blue—Ivory Line

No. 510 Black—White Line

No. 610 Apricot—Ivory Line

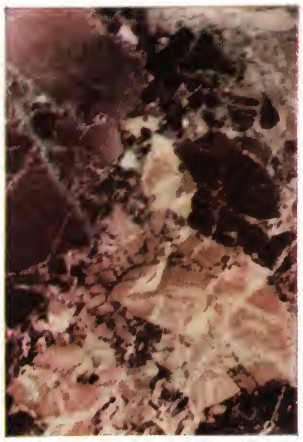
No. 11 White

No. 21 Ivory

No. 31 Nile Green

No. 32 Ocean Green

No. 41 Chinese Blue



No. 901 Breche Rose

SIZES

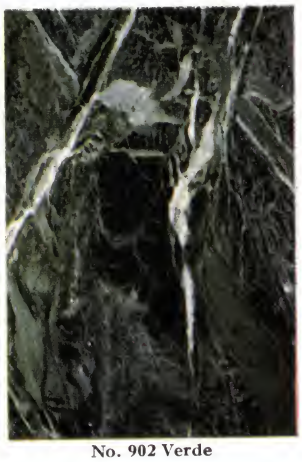
*Tile-Design Monowall—Panel sizes 4′ x 4′, 5′, 6′, 8′, 10′, and 12′ x ⅛″. Scored lines are 4″ apart. On special order, scored lines will be spaced 8″, 12″, or 16″ apart. For modern horizontal decorative effects, scoring will be done in one direction only and spaced 8″, 12″, or 16″ apart.

Plain Color Monowall—Panel sizes 4′ x 4′, 5′, 6′, 8′, 10′, and 12′ x ⅛″.

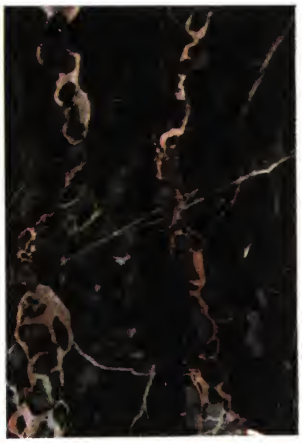
Marble-Design Monowall—Panel sizes 4′ x 8′, 10′, and 12′ x ⅛″; also 32″ x 48″ x 3/16″. Pattern runs 4′ way of all panels.

Wood-Design Monowall—Panel sizes 4′ x 8′, 10′, and 12′ x ⅛″; also 32″ x 48″ x 3/16″. Pattern runs 4′ way of all panels.

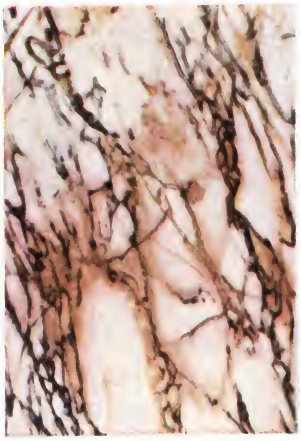
*Note: Formerly known as Monotile.



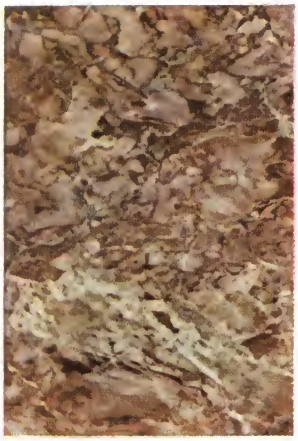
No. 902 Verde



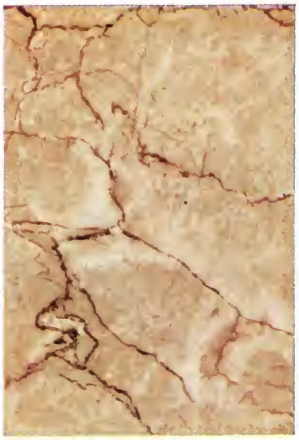
No. 903 Black and Gold



No. 904 Light Skyros



No. 905 Jaune Benou



No. 906 Rose de Brignolles

No. 810 Avadire

No. 811 Prima Vera

No. 812 Circassian Walnut

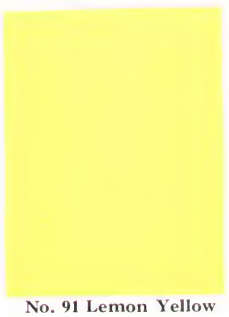
No. 813 Qtd. Walnut-American

No. 51 Black

No. 61 Apricot

No. 71 Chinese Red

No. 81 Turquoise Blue



No. 91 Lemon Yellow

How to Use These Specifications

In the following pages of specifications, items have been grouped by trades. All essential subject matter is presented as pre-written specification clauses in bold-face type. Matter in light-face type is explanatory or indicates where the architect must fill in dimensions, brand names, etc.

To form a complete specification, simply copy all paragraphs except those not pertinent to the job in hand. Extra copies of this specification are available upon request. Also, refer to drawings on pages 24 and 39.

In certain cases, especially in remodeling, certain details herein delegated to related trades may better be assigned to the resilient flooring contractor; for example, the leveling or renailing of wooden subfloors.

Caution—Linotile (Oil-Bonded), Linoleum, Cork Tile, Rubber Tile, Cork Carpet, and Linoflor should not be installed on any floor in direct contact with the ground. Armstrong's Asphalt Tile is the only type of resilient flooring recommended for below grade. Armstrong's Mastic Armoflor and Felt-Cushion Mastic Tile may be installed over concrete in direct contact with the ground on grade, but not below grade.

BRIEF SPECIFICATIONS
For Any Armstrong Product

Armstrong's (Name products here.) **in the patterns, colorings, sizes, designs, and gauges herein specified, shall be furnished and installed on the areas listed below.** (List here.):

All products covered by these specifications are to be installed in accordance with the latest edition of Armstrong's standard specifications by a handler of Armstrong products whose work is acceptable to the Armstrong Cork Company, and whose bid shall include all the labor and materials required by these specifications.

RESILIENT FLOORING

Asphalt Tile — Cork Carpet — Cork Tile — Felt-Cushion Mastic Tile — Linoleum — Linotile (Oil-Bonded) — Mastic Armoflor — Rubber Tile — Inlaid Linoflor

ITEMS FOR CARPENTRY CONTRACT

1. Subfloors shall be brought to a smooth, even surface (Specify distance.) **inches below the surface of the finished flooring.** (This distance is determined by allowing for thickness of the resilient flooring—See Table I—plus the thickness of the following materials if used: Lining Felt [1/16"], 1/8" Temwood, 1/4" Temboard, or Floor Fill. Allowance for Floor Fill varies, depending on the unevenness of the existing subfloor.)

Single Wood Floors of T. & G. Boards

(Resilient floorings should never be pasted to a single wood subfloor. If the single floor is made of tongue-and-groove boards, use [2a].)

2a. The floor shall be covered with a layer of Armstrong's 1/4" Temboard or Armstrong's 1/8" Temwood, which shall be firmly nailed with 2d rosin-coated nails spaced not more than 6" apart in both directions and beginning at the outside edges of each piece. The pieces of Temwood or Temboard shall be laid not more than 1/16" apart with the smooth side down, so that the rough or "wire" side is exposed. (Temboard or Temwood should never be used over a single floor consisting of square-edged boards.)

Single Wood Floors of Square-edged Boards

(If the single floor does not consist of tongue-and-groove boards, use [2b].)

TABLE I—WEIGHTS AND GAUGES

The weights and gauges given in this table are manufacturing standards. Slight variations will occur; but for practical purposes, these figures are substantially correct.

Material	Approximate Thickness, In.	Finished Gauge, In.	Average Net Weight per Sq. Ft. in Lbs.	Roll Width in Ft.
ASPHALT TILE	1/8	.125	1.18	
	3/16	.187	1.70	
	1/4	.250	2.40	
	3/8	.375	3.60	
CORK CARPET	1/4	.250	.866	6
CORK TILE	5/16	.312	.70	
	1/2	.500	1.00	
FELT				
Armstrong's Lining Felt	1/16		.111	3
Armstrong's Saturated Felt	1/16		.144	3
FELT-CUSHION MASTIC TILE	5/64	.080	.577	
INDUSTRIAL ASPHALT TILE	1/4	.250	1.5	
	1/2	.50	3.0	
INLAID LINOFLOR	1/16	.079	.56	6
LINOLEUM*				
Plain				
6mm. (Battleship)	1/4	.235	1.56	6
3/16-inch (Battleship)	3/16	.187	1.27	6
Heavy (Battleship)	1/8	.125	.84	6
Medium	3/32	.095	.67	6
Standard	5/64	.075	.58	6
Jaspé				
3/16-inch	3/16	.187	1.21	6
Heavy	1/8	.125	.83	6
Medium	3/32	.095	.63	6

Material	Approximate Thickness, In.	Finished Gauge, In.	Average Net Weight per Sq. Ft. in Lbs.	Roll Width in Ft.
LINOLEUM, continued				
Straight Line Inlaid				
Heavy	1/8	.125	.93	6
Medium	3/32	.095	.73	6
Standard	5/64	.075	.61	
Embossed Inlaid				
Heavy	1/8	.125	.79	6
Medium	3/32	.095	.64	6
Standard	5/64	.075	.52	6
Marbelle				
3/16-inch	3/16	.187	1.34	6
Heavy	1/8	.125	.84	6
Medium	3/32	.095	.66	6
Standard	5/64	.075	.57	6
Monobelle				
Heavy	1/8	.125	.84	6
Medium	3/32	.095	.66	6
Standard	5/64	.075	.57	6
LINOTILE (Oil-Bonded)	1/8	.125	1.00	
	3/16	.187	1.50	
	1/4	.250	1.90	
LINOWALL	1/20	.050	.344	3 & 6
MASTIC ARMOFLOR	5/64	.080	.577	3
RUBBER TILE	1/8	.125	1.15	
	3/16	.187	1.90	
	1/4	.250	2.35	

*The Armstrong Cork Company and other linoleum manufacturers in the United States have standardized on the five linoleum gauges shown above. All types of linoleum bearing the same gauge designation are now of identical thickness.

2b. The single floor shall be covered with a layer of 7/8″ kiln-dried tongue-and-groove boards, not over 3″ in face width, which shall be laid at an angle of 45 deg. to the under layer. The boards shall have end joints cut square and shall be driven tight and blindnailed with 8d steel-cut flooring nails.

Double Wood Floors

(If double wood subfloors are to be installed, use [3].)

3. Double floors shall be installed, the under layer consisting of 25/32″ kiln-dried tongue-and-groove boards not over 6″ wide, cut from 1″ stock. The boards shall be laid at right angles to the joists, with the ends cut square, staggered, and over bearings only. All boards shall be thoroughly facenailed at each end and at every bearing with two 8d nails.

The top layer shall consist of 7/8″ kiln-dried tongue-and-groove boards not over 3″ in face width and shall be laid at an angle of 45 deg. to the under layer. The boards shall have end joints cut square and shall be driven tight and blindnailed with 8d steel-cut flooring nails. (If, for economy, the top layer is omitted, the bottom layer should be covered with Armstrong's Temboard or Temwood as specified in [2a].)

Repairing Old Floors

(Select clauses from [4a] to [4d] if existing floors are extremely uneven and are not being leveled with Armstrong's Floor Fill.)

4. Existing floors throughout (Specify rooms.)

a—shall have all cracks wider than 1/8″ and all holes larger than 1/4″ diameter filled with snugly fitted pieces of wood or plastic wood.

b—shall have all loose and defective boards replaced with sound new material.

c—shall be renailed as necessary to make them rigid and secure.

d—(Same as [2a].)

Baseboards and Plinths

5. Wooden baseboards and plinth blocks shall be extended to the top surface of the subfloor.

6. Just prior to the application of the resilient flooring, the Contractor shall scrape all uneven joints in the subfloor and leave a smooth, even, and clean surface suitable for the reception of the resilient flooring.

Stair Nosings

7. On each stair tread (Specify locations.).

a—also including the top treads at all floors that will be covered with resilient flooring.

b—and intermediate landings.

c—the Contractor shall provide and install a continuous nosing (Specify kind.) **with the top edge set so as to finish flush with the surface of the resilient flooring. Nosings shall be rigidly secured in place by** (Specify method.).

Flash Type Cove and Base

(Use [8] when Armstrong's Flash Type Cove and Base is to be installed on concrete or plastered walls in new construction. Also for existing plastered walls, unless the plaster is sound and the lath is rigid and not springy, in which case the binding strip, end stops, and corners may be nailed to the studs and lath.)

8. On all walls throughout (Specify areas.) **the Contractor shall provide and install a continuous white pine ground flush with the finished wall surfaces. The ground shall be 1 1/4″ wide and not less than 7/8″ thick, with its center line set parallel to and** (Specify 5 3/8″ for 6″ high base; 3 7/8″ for 4 1/2″ high base.) **above the surface of the subfloor.** (The binding strip and tops of the corner pieces and end stops are nailed to this wood ground.)

Rubber or Cork Cove Base

(Use [9] when resilient flooring is to be installed with Armstrong's Cork Tile Cove and Base, or with Armstrong-Stedman Hospital Type and 4″, 6″, or 8″ Flexible or Heavy Type Rubber Cove Base; and also for the Rubber Plinth. The 2″ Heavy Type Rubber Cove Base and the Utility Type Rubber Cove Base do not require wood grounds, but the plaster or concrete wall should be smooth, true, and even.)

9. On all walls and partitions throughout (Specify areas.) **the Contractor shall provide continuous white pine grounds of proper thickness and shall install them flush with the finished wall surfaces. The ground shall be 3″ wide, set with the bottom edge 1/4″ above the subfloor surface.**

(Use [10] for concrete walls only.)

10. Grounds shall be built into the forms and securely anchored in the concrete so as not to be damaged by the removal of forms.

ITEMS FOR MASONRY CONTRACT

Leveling

(The leveling and conditioning of existing concrete subfloors that are sound are provided for in the specification for the resilient flooring contractor.)

1. (Same as [1] in "Items for Carpentry Contract.")

2. The surface of all concrete floors throughout (Specify areas.).

a—as well as the treads and the intermediate landings of stairs (Specify location.).

b—shall be steel troweled to a smooth, even, level, hard surface free from expansion joints, depressions, scale, or foreign deposits.

Stair Nosings

3. (Same as [7] in "Items for Carpentry Contract.")

Flash Type Cove and Base

(Use [4] for new construction when Armstrong's Flash Type Cove and Base is to be used on concrete subfloors.)

4. The Contractor shall set 5/8″ diameter wood plugs, not less than 1″ long, into the concrete subfloor at all points where Armstrong's Metal End Stops or Outside Metal Corner Pieces are indicated on the blueprints. (The metal parts are nailed to the plugs.)

ITEMS FOR PLASTERING CONTRACT

(Use [1] when resilient flooring is to be used with Armstrong's Flash Type Cove and Base, Asphalt Tile Cove Base, or Rubber Cove Base and Plinth Blocks.)

1. All plastering on walls throughout (Specify areas.) **shall be made smooth, even, and free from pits or other imperfections, and shall be carried below the wood grounds to the subfloor. The plaster above and below the wood grounds shall be flush with the face of the grounds. The surface of the intersection of the wall and floor shall be left true, even, and free from dirt or foreign matter.**

ITEMS FOR RESILIENT FLOORING CONTRACT

(Use [1] in a sub-contract or a contract direct with the owner.)

1. The General Conditions of the Contract for the Building (Specify date of edition.) **issued by the American Institute of Architects are a part of these specifications, and the Contractor shall consult them in detail for instructions on his work.**

Heat and Ventilation

2. The Owner shall provide good ventilation and maintain a temperature of at least 70° F. while the resilient flooring is being laid. He shall furnish hoisting service, adequate lighting, and power for scrubbing and polishing.

3. After the resilient flooring has been inspected and approved, the Owner shall cover it with heavy paper in rooms where painting or other work is to be done.

4. The Contractor shall carefully inspect all surfaces on which his materials are to be applied and shall report to the Architect in writing any unsatisfactory surfaces. Otherwise, the Contractor shall assume full responsibility for all failures and defects in his work resulting from such surfaces.

Guarantee

5. The Contractor, on completion of his work, as evidenced by final payment, shall provide the Owner with a written guarantee warranting that all workmanship and materials are free from defects and that he shall promptly repair or replace without additional cost to the Owner any and

all such defects which evidence themselves within one year after the completion of his work.

Cleaning and Leveling of Subfloors

(Use [6] for existing wood, concrete, ceramic tile, terrazzo, marble, or metal subfloors if necessary. Omit [6] when wood floors are to be leveled with Temwood or Temboard.)

6. Badly worn floors or low places shall be leveled with Armstrong's Floor Fill applied in accordance with the maker's directions.

(Use [7] for modernization work.)

7. All oil, wax, or varnish on existing floors throughout (Specify areas.) **shall be entirely removed. The floors shall then be thoroughly rinsed.**

(Use [8] for all subfloors except concrete.)

8. All paint shall be removed from the subfloor, and the subfloor shall be thoroughly rinsed.

Non-Absorbent Subfloors

(Use [9] where resilient floorings are laid over tile, terrazzo, marble, and other non-absorbent subfloors.)

9. The subfloor shall be thoroughly scrubbed with a scrubbing machine, using soapy water and clean, sharp sand. Any joints or cracks shall be repaired with a mixture of portland cement and plaster of Paris finished flush with the surface.

Metal Subfloors

(Use [10] for metal subfloors.)

10. Metal subfloors shall be true and even and shall be thoroughly cleaned of all dirt, grease, paint, rust, etc.

Concrete Subfloors

(Use [11] and [12] where resilient flooring is to be laid over concrete floors. For concrete to be sufficiently dry to serve as a satisfactory subfloor for resilient floorings, adequate ventilation is imperative in all spaces between the ground and the concrete.)

11. The Contractor shall repair any expansion score marks or cracks with a mixture of portland cement and plaster of Paris, finished flush with the surface of the floor. A chalky or dusty surface shall be swept clean and primed with Armstrong's Cork Tile Sealer. A single coat of paint that is solid, dry, and well-bonded need not be removed. Where there are two or more coats, all shall be removed. The floors shall then be thoroughly rinsed.

12. The Contractor shall test the concrete for dampness, using anhydrous calcium chloride as described in Armstrong specifications. The resilient flooring shall not be laid until concrete is thoroughly dry. (This test is not an absolute guarantee of dryness, but merely an indication of excessive moisture. Wherever possible, concrete should be permitted to dry out for several months. Every effort should be made to provide heat and good ventilation.

Magnesite Subfloors

(If resilient flooring is to be installed over magnesite subfloors, send a complete description of their condition to Armstrong Cork Company, Lancaster, Pa., so that the best method of installation can be recommended. New magnesite subfloors are slow drying; old ones are often structurally weak. Therefore, to prevent failures, a special recommendation is necessary in every case.)

Materials and Scope of Work

13. Throughout (Specify areas.), **the Contractor shall provide and install Armstrong's** (Specify flooring. Also indicate whether Armstrong's Flash Type Cove and Base, Asphalt Tile Cove Base, Cork Tile Cove and Base, or Armstrong-Stedman Rubber Cove Base and Plinth Blocks are to be used.) **in the following gauges, pattern numbers, designs, and types:** (List here.).

14. All materials shall be manufactured by the Armstrong Cork Company and shall be delivered on the job in their original packages with seals unbroken and with the manufacturer's brand and name clearly marked thereon. No seconds or remnants shall be used.

Method of Installation

15. The method of installation shall be as follows: (Here specify the method given in Table II.).

Lining Felt

(Use [16] when Armstrong's Lining Felt has been specified in [15].)

16. All lining felt shall be cut to fit accurately and shall be laid, with a minimum of seams, so that its length runs across the floor boards. Seams shall be butted and made tight. All cross-seams shall be staggered. After being pasted down, all lining felt shall be thoroughly rolled with a suitable linoleum roller, from the center out, so as to insure complete adhesion and remove air bubbles. All seams and edges shall be rolled until firm adhesion has been obtained.

Linoleum and Roll Goods

(Use [17] for linoleum.)

17. All linoleum shall be delivered to the job in full rolls and shall conform to Federal specifications LLL-L-351, and LLL-L-361. No piecing of short ends shall be allowed. The linoleum shall be carefully scribed to form a tight joint at junctions with vertical surfaces.

(Use [18] for patterned linoleum, but not for Plain, Jaspé, Marbelle, or Monobelle.)

18. The cut edges of patterned linoleum shall be carefully butted and the pattern matched.

(Use [19] where linoleum, cork carpet, or Linoflor may be subjected to spilling or flooding of water from above.)

19. The Contractor shall seal all seams and edges with Armstrong's

TABLE II—METHOD OF APPLYING RESILIENT FLOORINGS

The numbers refer to the paragraphs below, which indicate method of installation to be incorporated in Paragraph 15 in "Work of Resilient Flooring Contractor." Where two or more numbers are given, the first is the preferred and the others should be used only when special properties are desired, such as cushioning or waterproofing.

	Linoleum or Cork Cpt.	Linotile	Cork Tile	Rubber Tile	Asphalt Tile	Armoflor or Mastic Tile	Linoflor
Suspended Wood	1	1	1	5	7	2	2
Suspended Concrete	1 or 2	2 or 1	2 or 1	6 or 5	9	2	2
Concrete, Ceramic Tile, Marble, or Terrazzo in direct contact with ground, on or below grade	3	3	3	3	8	8	3
Suspended Ceramic Tile, Marble, or Terrazzo	1 or 2	1 or 2	1 or 2	6 or 5	9	2	2
Metal	4	4	4	6	9	10	4
Stair Treads: Wood or Concrete	2	2	2	6	9	2	2
Stair Treads: Metal	4	4	4	6	9	10	4

1. Armstrong's Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Resilient flooring shall be bonded to felt with Armstrong's Linoleum Paste.

2. Resilient flooring shall be bonded direct to subfloor with Armstrong's Linoleum Paste.

3. Don't use.

4. Resilient flooring shall be bonded direct to subfloor with Armstrong's No. 210 Rustproof Cement.

5. Armstrong's *Saturated* Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Resilient flooring shall be bonded to saturated felt with Armstrong's No. 236 Waterproof Cement.

6. Resilient flooring shall be bonded direct to subfloor with Armstrong's No. 236 Waterproof Cement.

7. Armstrong's Saturated Lining Felt shall be bonded to subfloor with Armstrong's Linoleum Paste. Asphalt Tile shall be bonded to the felt with Armstrong's No. 160 Emulsion.

8. See "Caution," page 32. Subfloor shall first be primed with Armstrong's Primer. Then the resilient flooring shall be bonded direct to subfloor with Armstrong's Asphalt or Mastic Cement, strictly in accordance with the manufacturer's latest specifications, a copy of which the Contractor shall obtain before starting work.

9. Asphalt Tile shall be bonded direct to subfloor with Armstrong's Asphalt Cement or No. 160 Emulsion.

10. Resilient flooring shall be bonded direct to subfloor with Armstrong's Asphalt or Mastic Cement. (*Do not specify Mastic Armoflor or Felt-Cushion Mastic Tile for below-grade areas.*)

No. 236 Waterproof or No. 210 Rustproof Cement.

(Use [20] where linoleum, cork carpet, or Linoflor is used over wood subfloors.)

20. The resilient flooring shall be laid so that all seams are at right angles to the floor boards. If this involves wasteful cutting, it shall be laid with its seams parallel to the floor boards; and Armstrong's Fabric Seam Protector shall be pasted to the lining felt with Armstrong's Linoleum Paste, directly under the seams in the resilient flooring.

Adhesives and Primers

(Use [21] to [24] depending upon the type of adhesive or primer required. See Table II.)

21. Armstrong's No. 210 Rustproof Cement shall be allowed to set for 15 minutes before the resilient flooring is laid. The resilient flooring shall be thoroughly rolled after it has been laid.

22. Armstrong's Mastic Cement shall be allowed to set 30 minutes before the flooring is laid.

23. Armstrong's Asphalt Cement and Asphalt Tile shall be stored at 75° F. for 24 hours before use. The Asphalt Cement shall be allowed to set 15 to 30 minutes before the flooring is laid.

24. Armstrong's Primer shall be kept away from open flames. It shall be well brushed into the pores of concrete. A second coat shall be applied if the concrete is very porous. The primer shall be thoroughly dry before Asphalt Cement is applied.

Layout and Fitting

25. All resilient flooring shall be applied in such manner that its entire under surface shall be securely bonded in place and the entire upper surface shall be smooth, clean, and free from all imperfections. The lines between the tiles shall be straight so as to preserve the symmetry of the design.

Borders

26. The width of borders may vary to allow for variations in the dimensions of the rooms and for the designs selected. All borders shall follow the line of permanent fixtures.

27. The field or border shall butt against the base and plinth blocks.

Rolling

28. All resilient flooring shall be rolled with a linoleum roller to eliminate air bubbles. Sandbags shall be laid along all high spots, irregular areas, and joints until all danger of loosening has passed. Then the Contractor shall immediately wipe up all surplus adhesive.

Runners

(Use [29] when runners of resilient flooring are specified, or when resilient flooring is laid at doorways where the underfloor is not countersunk or where there are no thresholds.)

29. The edges of the resilient flooring shall be protected with Armstrong's Beveled Edging.

Stair Treads

(Use [30] when stair treads of resilient flooring are specified.)

30. To overcome the offset caused by the flange of stair-tread nosings, the Contractor shall build up the area behind the flange with Armstrong's Lining Felt applied with (See Table II for proper adhesive.).

Flash Type Cove and Base

(Use [31] through [34], as necessary, when resilient flooring is to be installed with Armstrong's Flash Type Cove and Base.)

31. Throughout (Specify rooms.) **the Contractor shall provide and install Armstrong's Flash Type Cove and Base in** (Specify colors of coved linoleum and 4½″ or 6″ height.).

(Use [32] for existing concrete floors not plugged as specified in [4] under "Items for Masonry Contract.")

32. The Contractor shall set ⅝″ diameter wood plugs, not less than 1″ long, into the concrete subfloor at all points where Armstrong's Metal End Stops or Outside Metal Corner Pieces are required.

(Use [33] for existing concrete walls without wood grounds of the type specified in [8] of "Items for Carpentry Contract.")

33. The Contractor shall set ⅝″ diameter wood plugs, not less than 1″ long, in the walls at the proper height and at intervals of not more than 12″ and not less than 6″, flush with the wall surface, for nailing Armstrong's Metal Binding Strip. Similar plugs shall be installed in the wall at all points where Armstrong's Metal End Stops or Corner Pieces are required.

34. The binding strip, end stops, and corner pieces shall be installed with rosin-coated, flat-headed nails long enough to thoroughly secure them flush and tight to the wall. Armstrong's ¾″ Wax Fillet Strip shall be pasted in place with Armstrong's Linoleum Paste or Armstrong's No. 236 Waterproof Cement. The cove linoleum shall be pattern scribed and pasted in place with Armstrong's Linoleum Paste or Armstrong's No. 236 Waterproof Cement. Where the linoleum joins the corners or end stops, it shall be mitered and trimmed to fit neatly. The edge of the field or border shall be made tight and flush with the edge of the coved linoleum.

Asphalt Tile, Cork Tile, or Rubber Cove Base

(Use [35a] for Asphalt Tile Cove Base; [35b] for Rubber Cove Base; [35c] for Cork Tile Cove and Base.)

35. Throughout (Specify areas.) **the Contractor shall provide and install—**

a—Armstrong's Asphalt Tile Cove Base in (Specify 4″ or 6″ height and ⅛″ or 3/16″ thickness.)**; shall firmly butt it against the finished flooring; and then shall securely paste it to the wall surface with Armstrong's Asphalt Cement.**

b—Armstrong-Stedman Rubber Cove Base using (Specify type, size, colors, and thickness.)**. The Contractor shall provide all coved corner pieces, plinths, and end stops. These shall be secured firmly in position with Armstrong's No. 236 Waterproof Cement and shall make a neat tight joint all around with the finished flooring.**

c—Armstrong's Cork Tile Cove and Base using their (Specify light, medium, or dark shade, 4″ or 6″ height, and 5/16″ or ½″ gauge.)**. The cove and base shall be pasted in place with Armstrong's Linoleum Paste and fastened with tempered headless steel brads. The cove and base shall be sanded to a smooth and even surface and left clean and in good condition.**

Finishing Cork Tile

(Use [36] for unbeveled cork tile.)

36. The entire cork tile surface shall be machine-sanded with No. 00 sandpaper so as to produce a smooth, level finish. If considerable leveling of the cork tile is necessary, due to uneven subfloors, this sanding shall be preceded by a sanding with No. 1½ paper.

(Use [37] for all cork tile not prefinished at the factory.)

37. To all cork tile, the Contractor shall apply a brush coat of Armstrong's Cork Tile Sealer, which shall be allowed to dry for about 15 to 30 minutes; one coat of Armstrong's Cork Tile Undercoat, which shall be allowed to dry 15 to 30 minutes; followed by one coat of Armstrong's Linogloss Wax. The Cork Tile Undercoat shall be thoroughly buffed with a floor machine before the Linogloss Wax is applied.

(If cork tile has been supplied factory-finished, use [38] instead of [37].)

38. All cork tile surfaces shall be given one coat of Armstrong's Linogloss Wax and shall be thoroughly buffed with a floor machine.

Washing and Waxing

(Use [39] for linoleum, Linotile, cork carpet, Linoflor, Mastic Armoflor, or Felt-Cushion Mastic Tile.)

39. After allowing the resilient flooring to set for at least twelve hours, the Contractor shall wash it with a solution consisting of ½ cup of Armstrong's Floor Cleaner in 10 quarts of water. He shall rinse the floor thoroughly with clear, cold water, and apply one thin coat of Armstrong's Linogloss Wax.

(Use [40] for Asphalt Tile only.)

40. Asphalt tile shall not be washed or waxed for two weeks after installation. Two weeks after installation, the Contractor shall clean it with Armstrong's Floor Cleaner, rinse it with clear, cold water and apply one thin coat of Armstrong's Linogloss Wax.

(Use [41] for rubber tile only.)

41. Not sooner than five days after the rubber tile has been installed, the Contractor shall wash it thoroughly, using the method currently recommended by Armstrong Cork Company, and shall apply one thin coat of Armstrong's Linogloss Wax.

FLORMASTIC

ITEMS FOR FLOORING CONTRACT

1. In the following areas (List here.) **the Contractor shall install industrial cold mastic floors, using Armstrong's Flormastic according to the manufacturer's directions.**

2. *Preparation of Concrete Bases:* **All concrete shall be cleaned of all grease, dirt, or foreign matter. Where feasible, it shall be washed down with water.**

3. *Preparation of Gypsum Bases:* **All dirt, plaster, or foreign matter shall be removed from gypsum bases. The entire area shall then be given a coating of Armstrong's No. 701 Primer. This primer shall consist of one gallon per 100 square feet and shall be applied with a broom or brush. It shall be allowed to dry 24 hours minimum.**

4. *Preparation of Wood Bases:* **In wood bases, decayed or unsound timbers shall be replaced. Loose boards shall be securely fastened so that they cannot become loose.**

The wood floor shall then be cleaned of all dirt, dust, or loose particles, and covered with a coating of Armstrong's Emulsion Primer, using approximately 2 gals. per 100 sq. ft. This primer shall be allowed to dry overnight. On top of the primer, an expanded metal reinforcing, preferably a type having 3/4″ x 1½″, or 1½″ x 3″ meshes, shall be nailed securely to the wood base every six inches in each direction.

(It is possible to successfully apply industrial heavy-duty cold mastic floors over wood floors only when the sub-construction is rigid enough to afford a perfectly solid foundation for the mastic.)

5. *Priming:* **The base shall be given a coating of Armstrong's Emulsion Primer. This shall be spread over the entire surface with a broom or brush, at the rate of 1 gal. to 1½ gals. per 100 sq. ft.**

6. *Materials:* **With the exception of a slag cement containing a relatively high percentage of iron, any of the usual standard brands which are acceptable for state highway construction shall be used. "Concrete" sand suitable for a good grade of concrete finish shall be used. It shall be free from quicksand, clay, mica, organic matter, or other impurities. Insofar as is possible, the sand selected shall be 90% retained on a 48-mesh screen. "Plasterer's sand" shall not be used. Gravel, stone, or trap rock chips passing 3/8″ mesh and retained on 1/8″ mesh shall be used.**

7. *Mixture* (Use [7a] for small jobs.)

7a. The following mixture shall be used:

- **¾ volume of portland cement**
- **2 volumes of Armstrong's Flormastic**
- **2 volumes of concrete sand**
- **6 volumes of gravel, stone, or trap rock chips, 1/8″ to 3/8″ in diameter**
- **1½ volumes (maximum) of water**

(Use [7b] for large installations.)

7b. The Contractor shall send to Armstrong Cork Company, Lancaster, Pa., for analysis, at least 50 lbs. each of the sand, gravel, and stone chips that are available, and shall use the formula recommended by Armstrong.

8. *Sequence of Mixing:* **In preparing the mixture, the gravel or stone chips shall be put into the mixer first, and enough water added to completely wet the particles. Armstrong's Flormastic shall be added, together with enough more water to keep the mixture mastic. Following this, the portland cement, and the rest of the water shall be added gradually, so that a uniform stiff mixture is maintained until the ingredients are all thoroughly compounded.**

9. *Spreading:* **The average finished thickness of mastic flooring shall be 1/2″. In order to control thickness, screed strips or wood blocks approximately 2″ wide and of the required thickness shall be placed on the subfloor, not more than 10′ apart.**

Power Float Finish

(Include [10], [11], and [12] if a power float finish is desired. For a hand finish, use [13] instead.)

10. The mastic mixture, as it comes from the mixer, shall be raked into place and then tamped or rolled. The mixture shall be sufficiently compacted by tamping so that it can be scraped to a true level before the power tamp and floating machine are applied. The tamper shall be made from a heavy block that has been corrugated on its bottom base.

(The dry consistency of the proper mix makes screeding by the usual method difficult. As the mastic will be compacted through the tamping and power floating, allowance should be made for this by placing the mastic slightly above the desired finished floor level.)

11. The power-floating machine shall be operated on a given area only until sufficient mortar has been worked to the surface to completely fill the voids between the aggregate.

If the mastic has been mixed to the correct consistency, a power-floating machine may be used immediately following the scraping. However, if the consistency has been allowed to become too thin, floating should be delayed until some of the water has evaporated. The proper time for floating is when the mastic has become stiff enough to bear the whole weight of a man without appreciable indentation or heel marks.

12. If necessary, when the mastic has set up quite hard, it shall be given a second power-floating. (This smooths the surface considerably more and produces a finish that in most instances will be smooth enough for industrial areas. If a very smooth finish is desired, the floated floor should be given a steel troweling once-over in the usual manner.)

Hand Finish

13. The mastic mixture as it comes from the mixer shall be of such consistency that it can be roughly spread in place with a trowel. It shall then be straightedged in a manner similar to that used in placing concrete topping. The finished level shall be predetermined by the setting of the screeds. Finishing shall be done in a manner similar to that of finishing concrete topping. It shall be wood-floated at the time of initial set and shall be given a steel troweling at the time of final set.

(Include [14] whether the floor is power-floated or hand-finished.)

14. *Curing:* **Care shall be taken to prevent too rapid drying, particularly in areas subjected to drafts created by elevator shafts, open windows, direct sun, etc. In order to accomplish this curing, the floor shall be covered, immediately after finishing, with paper, sawdust, or damp sand for at least 24 hours.** (Too rapid drying, due to drafts or heat, causes unequal contraction, which results in crazing or cracking of the surface.)

UNDERLAYMENT

ITEMS FOR FLOORING CONTRACT

1. The Contractor shall level subfloors in the following areas (List here.), **using Armstrong's Underlayment.**

2. *Preparation and Priming*—Same as [2], [3], [4], and [5] in Cold Mastic Floor Specification above.

3. *Mixing, Spreading, Finishing*—**The Underlayment shall be mixed, spread, and finished in accordance with the manufacturer's directions.**

4. *Curing*—Same as [14] in Cold Mastic Floor Specification.

LINOWALL

ITEMS FOR PLASTERING CONTRACT

Plaster Walls

1. Throughout (Specify areas.) **the putty coat of plaster shall be finished to a smooth, even surface with all corners plumb. Metal beading shall be omitted on all outside corners.** (In remodeling, the metal beading should be removed.)

(Use [2] if rounded outside corners are desired.)

2. All outside corners shall be rounded to a radius of (Specify 1″ for 750 Series patterns, but 5/8″ for all other patterns.).

(Use [3] if square outside corners are desired.)

3. All outside corners shall be finished square.

ITEMS FOR CARPENTRY CONTRACT

Wallboard Walls

(All wallboards shall have a surface smooth enough so that no markings will show through the Linowall. Plywood, hard-pressed boards and the so-called plaster boards faced with smooth cardboard are satisfactory. Boards fabricated of laminated layers of paper or non-waterproof paper pulp or spongy boards of loose-pressed fibrous materials, are not recommended. In no case can a guarantee be given against walls fabricated of boards which buckle due to the absorption of moisture.)

1. The Contractor shall provide and rigidly install horizontal cross headers between the studs of all walls and partitions in (Specify areas.)**. One row of headers shall be installed at the top and one at the bottom edge of wallboards, with intermediate rows every 24″ or 36″ apart. Throughout** (Specify areas.) **the Contractor shall install** (Specify brand and thickness.) **wallboard.**

2. All joints shall be vertical and shall occur over bearings only. All wallboard shall be rigidly secured to all horizontal and vertical supports with 4d blued galvanized or coated nails spaced not over 6″ apart, ½″ from the edges of all wallboards. All nail heads shall be set with a punch. After erection, all cracks between wallboard units, all countersunk nail-head holes, and all dents or other surface imperfections shall be filled flush with non-shrinking plastic, which shall be sanded to a smooth finish when dry and hard.

(Use [3] for hard-pressed boards.)

3. Wallboards shall be erected with the "wire" side exposed.

(Use [4] for all boards except plaster boards.)

4. Space between boards shall be at least 1/16″.

(Use [5] for plaster boards only.)

5. Plaster boards shall be butted tightly; and the joints shall be secured by means of the U. S. Gypsum Company's Perfatape System. Where this system is used, it is unnecessary to use plastic between boards.

(Wallboard is not recommended around built-in tubs. Plaster is recommended, but when wallboard must be used, include [6].)

6. Cross-headers shall be installed around built-in tubs at the height of the tub. The wallboards shall be plywood or hard-pressed boards. Before nailing them around the tub, the Contractor shall apply Armstrong's No. 210 Rustproof Cement to the edges of the boards that butt to the flange of the tub, and to both sides of the boards, to a height of 6″ from the bottom.

ITEMS FOR ELECTRICAL AND PLUMBING CONTRACTS

Fixtures

1. Throughout (Specify areas.) **lighting fixtures, switch plates, and other wall fixtures,**

2—plumbing fixtures, radiators, towel racks, soap dishes, and other bathroom fixtures, except built-in tubs

(Use [3a] for new construction.)

3a—shall not be placed until the Linowall has been installed.

(Use [3b] for modernization work.)

3b—shall be carefully taken down, stored, and replaced after the Linowall has been installed.

ITEMS FOR WALL COVERING CONTRACT

1. All wall surfaces throughout (Specify areas.) **shall be covered with Armstrong's Linowall of colors selected by the Architect. The work shall be done in accordance with the manufacturer's latest standard specifications, a copy of which the Contractor shall obtain. He shall remove all debris caused by his work.**

2. All plaster walls shall be thoroughly dry throughout and shall be treated with a brush coat of Armstrong's Wall Size before applying Linowall Paste and hanging the Linowall. Plaster of very hard non-porous finish shall be buffed lightly with sandpaper to insure penetration of the size.

(Use [3] where Linowall is to be applied to existing plastered walls in modernization work. Where scored Keene Cement has been used, special instructions will be furnished on request.)

3. Old wall paper, oilcloth, burlap, water paints, whitewash, etc., shall be completely removed before Linowall is applied. Oil paints or enamel need not be removed entirely if they are firmly bonded to the wall. However, the film shall be thoroughly scored and cut through to the plaster with a coarse No. 3 sandpaper.

4. Cracks, holes, and dents in plaster, and all spaces between wallboards shall be patched with a quick-setting patching plaster, which shall be sanded to a smooth, level finish when dry and hard.

5. In cold weather, Linowall shall be kept in a room of 70° F. temperature for 48 hours before unrolling. The Owner shall heat rooms where Linowall is to be installed to 70°F. for 12 to 15 hours before work begins, so that the walls will be at a temperature of approximately 70° F. After installation of Linowall, the Owner shall maintain this temperature until the adhesives have thoroughly set (at least 12 hours).

6. All Linowall shall be installed with Armstrong's Linowall Paste or Armstrong's No. 210 Rustproof Cement, in accordance with the manufacturer's directions.

(Use [7] except where modernistic or other unusual decorative effects are desired.)

7. All seams shall be vertical.

8. All seams except those on square-finished, butted, outside corners shall be at least 6″ away from any corner.

9. Butted seams on outside corners shall be made and finished in strict accordance with the manufacturer's directions.

(Use [10] when tile patterns and rounded outside corners are specified.)

10. The job shall be laid out so that the centers of the blocks in the pattern fall on the apex of the rounded outside corners, with the vertical joinings between the blocks to either side of the rounded corner.

11. After the Linowall has been applied, it shall be well rolled and smoothed with the hands, from the center of the piece in all directions to the edges, to eliminate air pockets.

12. Paste spots, finger marks, etc., shall be removed from the face of the Linowall with a clean cloth dampened with a solution of Armstrong's Floor Cleaner.

Metal Cap Strip and Corner Pieces

(Use [13] for Linowall 750 Series.)

13. Armstrong's 1″ radius Outside and 5/8″ radius Inside Corner Pieces and Armstrong's Metal Cap Strip shall be securely nailed in place before the Linowall is hung.

(Use [14] for all Linowall series except 750.)

14. Armstrong's 5/8″ radius Outside and Inside Corner Pieces and Armstrong's Metal Cap Strip shall be securely nailed in place before the Linowall is hung.

(If no trim is to be used at the ceiling line, include [15]. Also include [15] if a plaster cornice is used.)

15. The Linowall shall be scribed to fit neatly against the ceiling or plaster cornice.

(Use [16] when a plaster cornice has not been specified in the plastering specifications.)

16. After the Linowall has been hung, it shall be finished at the ceiling line with a cornice molding (Specify profile and color.)**.**

(Use [17] when Linowall is to be coved onto the ceiling.)

17. Armstrong's 3/4″ Fillet Strip shall be pasted at the junction of the ceiling and side walls. The Linowall shall be pasted over it.

Special Metal Trim

(So many shapes, sizes, and finishes of metal trim are made and required for wall work that detailed directions for installation cannot be given here. However, names of reliable manufacturers will be supplied upon request. Furnish complete information as to the type required and its planned use with Linowall.)

Linosets, Inlays, Custom Designs

(Where inlays of metal, glass, or hand-carved linoleum are to be used with Linowall, specifications, working details, and other data will be furnished upon request.)

CORK TILE WAINSCOTING

ITEMS FOR PLASTERING CONTRACT

(Use [1] for new construction, for the replacement of old plaster, and when brick, hollow tile, or other masonry walls are to be finished with Cork Tile. All brick, hollow tile, and other masonry walls must be above grade and thoroughly dry before the plaster and Cork Tile are applied.)

1. In all areas where Cork Tile is to be installed on walls, the white coat shall be omitted; and the brown coat shall be brought to a true, even, smooth finish.

ITEMS FOR CARPENTRY CONTRACT

(Use [1] when Cork Tile is to be applied over wallboards. Do not specify loosely pressed building boards of fibrous materials or paper pulp boards. Boards consisting of a core of plaster faced with smooth cardboard, such as gypsum plaster lath, must be used.)

1. In all areas where Cork Tile is to be applied over wallboards, the wallboards shall be (Specify brand.) **in sizes not larger than 16″ x 32″. Wallboards shall be well faecnailed. Joinings shall be made on the studs, with at least 1/16″ between boards.**

ITEMS FOR WALL COVERING CONTRACT

1. Throughout (Specify areas.) **the Contractor shall provide and install Armstrong's** (Specify standard or beveled Cork Tile, gauge, and colors.) **in patterns selected by the Architect. All Cork Tile shall be made from a select grade of pure cork, homogeneous from face to back, free from foreign substances, and thoroughly and evenly baked throughout.**

The Contractor shall size all plaster and concrete walls with Armstrong's Wall Size before applying the Cork Tile. He shall make sure that all plaster is thoroughly dry and seasoned and well keyed to the lath. If the plaster is white coated, he shall make sure the bond of the white coat is tight and substantial. He shall clean painted plaster of anything that can be wiped off with a dry cloth. Water paints, grease, or dirt shall be thoroughly washed off. Soft, greasy soap shall not be used. Oil paints or enamel need not be removed if they are in excellent condition, but the paint or enamel shall be thoroughly scratched with No. 3 sandpaper or an ice shaver. The Contractor shall remove all discolored, blistered, cracked, scaly, or peeling paint and all oilcloth, burlap, or wall paper.

All Cork Tile shall be laid in Armstrong's Linoleum Paste. Any paste on the surface of the tile shall be removed by rubbing with a damp cloth. The lines between the tiles shall be straight, so as to preserve the symmetry of the design.

(Use [2] for unbeveled Cork Tile.)

2. All unbeveled Cork Tile shall be sanded smooth and level after installation, and the surface shall be left smooth, clean, and in good condition.

(Use [3] for Cork Tile that has not been factory-finished.)

3. All Cork Tile shall be finished with one brush coat of Armstrong's Cork Tile Sealer, which shall be allowed to dry 15 to 30 minutes; one coat of Armstrong's Cork Tile Undercoat, and one coat of Armstrong's Linogloss Wax. The Cork Tile Undercoat shall be thoroughly buffed before the Wax is applied.

(Use paragraph [4] when Cork Tile has been supplied finished at the factory.)

4. All factory-finished Cork Tile shall be given one coat of Armstrong's Linogloss Wax and thoroughly buffed.

MONOWALL

ITEMS FOR PLASTERING CONTRACT

(Use [1] for bearing walls and framing; also for exterior masonry walls, which should be furred out as specified in "Items for Carpentry Contract.")

1. Walls and framing shall be covered with any standard plaster base and gypsum plaster. The scratch coat and brown coat shall be applied, but the finish coat may be omitted. The brown coat shall be troweled so as to provide a firm, smooth, and level surface.

(Use [2] when Monowall is to be applied to interior walls of brick, hollow tile, precast blocks, masonry, or concrete. Paragraph [2] may be omitted if these surfaces are covered with smooth-surfaced wallboards fastened mechanically.)

2. Walls shall be given a brown coat of gypsum plaster troweled smooth and even. The scratch coat and finish coat may be omitted.

(Use [3] for remodeling.)

3. All large holes or hollow spaces shall be patched with patching plaster, which shall be sanded smooth and flush when hard.

ITEMS FOR MASONRY CONTRACT

(Use [1] when Monowall is to be applied to concrete.)

1. All concrete shall be troweled smooth and level to eliminate hollow or rough areas and form-board ridges. Wood grounds shall be built into the forms at all points where the drawings indicate that cove base or fixtures will be installed.

ITEMS FOR ELECTRICAL AND PLUMBING CONTRACTS

(Use [1] for new construction.)

1. No wall fixtures except built-in tubs shall be installed until the Monowall has been applied. Only on-set fixtures (towel bars, soap dishes, etc.) **shall be used. Fixtures shall not be supported by Monowall but by screws or expansion bolts driven into wood framing members or blocking installed for the purpose, or into masonry.**

(Use [2] for remodeling.)

2. All removable wall fixtures shall be removed and carefully stored before the Monowall is installed, and then shall be replaced. Only on-set fixtures (towel bars, soap dishes, etc.) **shall be used. Fixtures shall not be supported by Monowall but by screws or expansion bolts driven into wood framing members or blocking installed for the purpose, or into masonry.**

ITEMS FOR CARPENTRY CONTRACT

(Use [1] when walls are to be made smooth by the use of wallboards rather than plaster.)

1. In the following areas (Specify.) **the walls shall be faced with** (Specify smooth surfaced wallboards or gypsum lath.) **before the Monowall is applied. The wallboard shall be fastened by nailing to furring strips or studs.**

(Use [2] when Monowall is to be applied to concrete basement walls or to exterior walls of concrete, brick, hollow tile, or pre-cast block.)

2. Walls shall be furred out with 2 x 4's applied vertically 16″ on centers and cross-furred 16″ on centers with 2 x 2's or 1 x 4's. The Contractor shall then apply to this furring a facing of (Specify wallboards or gypsum lath.) **to receive the Monowall. Vents shall be provided at top and bottom for ventilation.**

(Use [3] when Monowall is to be applied with adhesives only.)

3. Monowall shall be installed with Armstrong's No. CM-50 Adhesive applied to the back of the Monowall. A prime coat or skin coat of this adhesive shall also be applied to the surface (wall or ceiling) **against which the**

Monowall is to be applied. Panels shall be pressed into place to aid adhesion and shall then be braced until the adhesive sets.

(Use [4] when Monowall is to be nailed. Nailing is not recommended but may be used with tile or marble designs.)

4. The Monowall shall be nailed on 8″ centers, vertically and horizontally, to solid wood backing or wood grounds with Armstrong's needle-pointed nails, which shall be placed to be as inconspicuous as possible. On plaster, the Monowall shall be coated with Armstrong's No. CM-50 Adhesive before it is nailed in place; and the nails shall be driven into the plaster at an angle. Nailheads shall be countersunk and the holes filled. In Tile-Design patterns, nailing shall be done in the score lines; and nail holes shall be filled with a filler of the same color as the score line in the Monowall.

(Use [5] for all jobs.)

5. Monowall shall not be installed until all removable fixtures have been removed. The pieces of Monowall shall be cut out at the proper points to accommodate projecting pipes, electrical outlets, etc.

Non-removable objects shall be outlined with an edge molding. (Specify Type A-43 or W-9. See page 29.) **Adhesive smeared on the face of the Monowall shall not be allowed to harden but shall be removed at once with a cloth moistened with kerosene or turpentine. Alcohol shall not be used.**

The Monowall shall be finished with the following Armstrong moldings and channels at all joints and edges, vertical or horizontal. (Specify types and colors.) **The channels shall not be nailed except where wall surfaces are irregular. Armstrong's needle pointed nails shall be used in such cases. Corner joints in all moldings and channels shall be mitred or coped as required. No fixtures shall be hung or nailed to the Monowall but shall be supported by framing back of the Monowall.**

(Use [6] when Monowall is to be applied to ceilings and walls.)

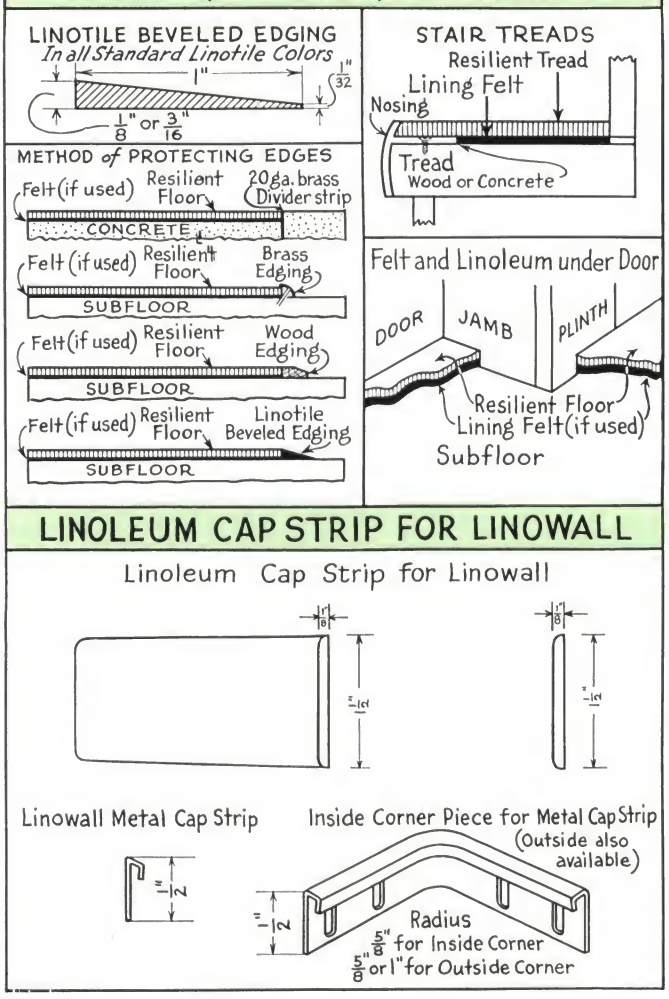
6. Monowall shall be applied to the ceiling before it is applied to the walls.

(Use [7] where Monowall is to be installed over built-in tubs.)

7. At built-in tubs, Armstrong's Tub Filler Plastic TF-10 shall be spread on the ledge of the tub along the wall. The metal channel (Specify Type A-42 or C-26.) **shall be fitted against this plastic. The channel opening shall then be partially filled with plastic, and the Monowall shall be pressed into the channel for at least ½″. At inside corners, the channel shall be coped to fit closely.**

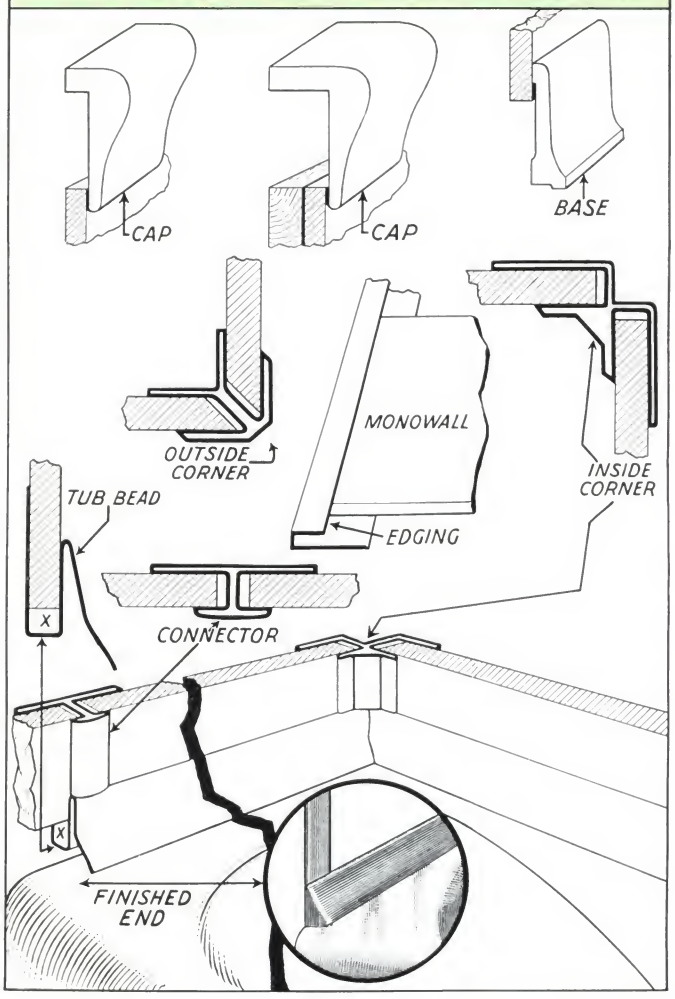
INSTALLATION DETAILS AND ACCESSORIES

EDGINGS, STAIRS, DOORWAYS



LINOLEUM CAP STRIP FOR LINOWALL

MONOWALL ACCESSORIES



ARMSTRONG OFFICES

ALBANY, N. Y.	1-3 Thacher Street
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BOSTON, MASS.	286 Congress St.
BUFFALO, N. Y.	329-331 Ellicott St.
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CHICAGO, ILL.	13th Floor, Merchandise Mart
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CLEVELAND, OHIO	812 Huron Road
COLUMBUS, OHIO	37 N. Third St.
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DENVER, COLO.	511-514 Interstate Trust Bldg.
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ARMSTRONG CORK COMPANY

Lancaster **Pennsylvania**

PRINTED IN UNITED STATES OF AMERICA

CHROMALIN

BIRD

Resilient Floor Coverings

BIRD CHROMALIN

A magnifying glass shows how the color goes through to the back.

A New Outstanding Improvement in Medium-Priced Resilient Floor Coverings

Chromalin is an entirely new type of medium-priced resilient floor covering which has been tried and proved by extensive test installations over a period of from six to eight years. It has both artistic and wearing qualities which are peculiarly its own and compares well with much higher priced resilient floor coverings. Chromalin is a patented product, developed in our own Research Department.

The tread or wearing surface consists of a tough, carefully compounded mastic made of very finely ground materials, the particles of which are held together by extremely strong nitro cellulose and other synthetic binders. The backing or base is of tough, heavy, asphalt-saturated felt which is commercially waterproof and will not rot under any ordinary floor conditions. The wearing surface is united to the back by heavy pressure and friction. The resulting bond is more than adhesion—in fact, the two surfaces are so closely united that it is impossible to tear them apart at the line of joining.

USES—The diversified applications of Chromalin are explained on page 8.

CHROMALIN QUALITIES

DECORATIVE AND DURABLE

Chromalin combines two features—beauty—from the standpoint of color, pattern, and finish—and extreme durability.

The tough surface tread on Chromalin gives tremendous resistance to wear. The service or life of Chromalin under any normal conditions is superior dollar for dollar to the best quality of light-weight inlaid linoleums now on the market.

PERMANENT PATTERNS

The designs and finish of Chromalin are always sharp and lustrous. The colors penetrate through to the backing and give the pattern a permanency equal to the life of the material itself. Some of the colors and patterns are illustrated on the following pages.

LASTING SMOOTHNESS

Chromalin is made with a smooth, hard-wearing surface. Since the Chromalin surface tread is made up of finely ground particles, there are no fibres to be roughed up by wear. Also the nature of this surfacing material is such that the more it is used the smoother and denser it becomes.

The surface of Chromalin will remain smooth during its entire life, and smooth floors are easy to clean, because dirt does not stick as hard to a smooth surface.

WATERPROOF

The finely ground particles in the surface tread are so completely surrounded by waterproof materials that the finished product is itself extremely waterproof.

ALL IN ONE SHEET

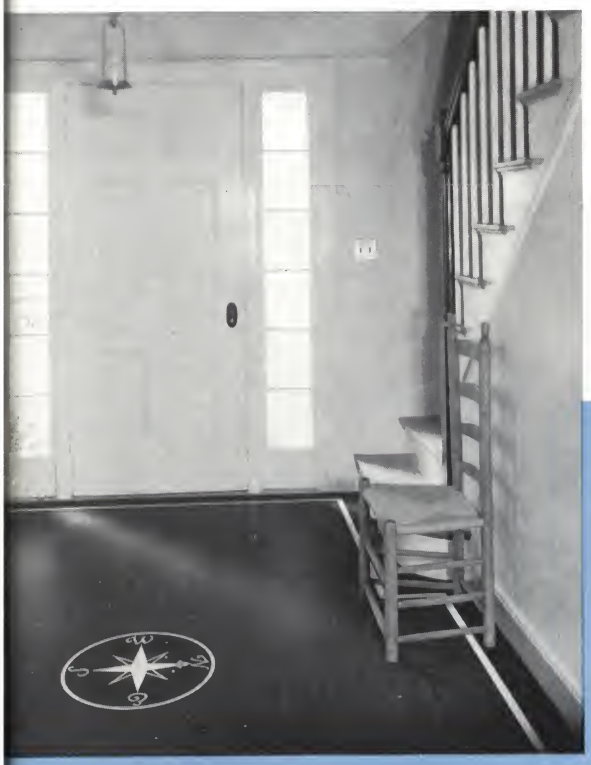
The surface tread of Chromalin is all in one continuous solid sheet. There are no small pieces of the design to become loosened by wear, nor are there joints in the design which may crack if the material is bent too sharply in laying.

A FLAT-LAYING FLOOR

Because of its continuous flexibility and waterproofness Chromalin makes a flat-laying floor even when laid loose. Its normal expansion and contraction is the same as ordinary smooth resilient floor coverings. For this reason it is not necessary to cement Chromalin, although for commercial installations we recommend it as giving better results.

IMPROVES WITH AGE

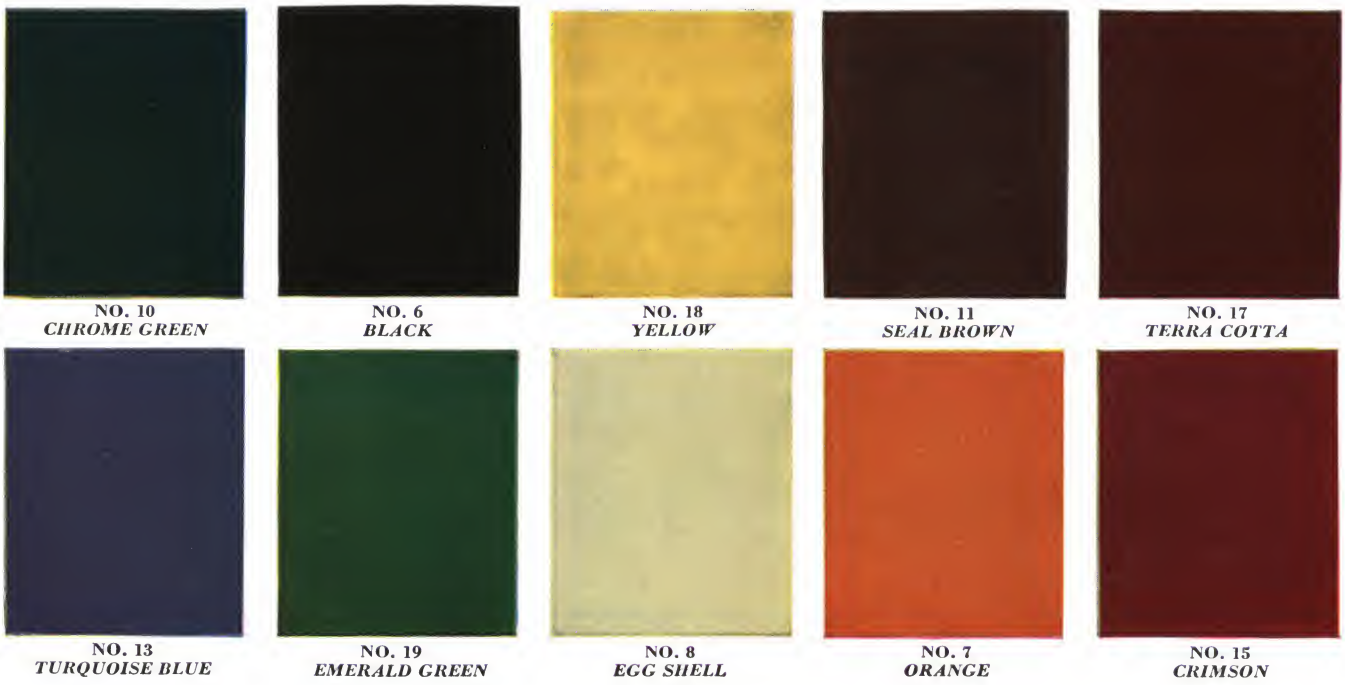
Chromalin has a tough, dense surface tread which does not become brittle, nor deteriorate with age. It ages very slowly and retains its flexibility for a long time.



MODERN INTERIORS DEMAND . . .

Chromalin is a new floor covering ideally

BIRD CHROMALIN PLAIN



NO. 10 *CHROME GREEN*
NO. 6 *BLACK*
NO. 18 *YELLOW*
NO. 11 *SEAL BROWN*
NO. 17 *TERRA COTTA*
NO. 13 *TURQUOISE BLUE*
NO. 19 *EMERALD GREEN*
NO. 8 *EGG SHELL*
NO. 7 *ORANGE*
NO. 15 *CRIMSON*

A WIDE SELECTION . . . The Bird Chromalin line includes a wide selection of accepted colors in plain and jaspé effects. It comes in 8/4 (two yards wide).

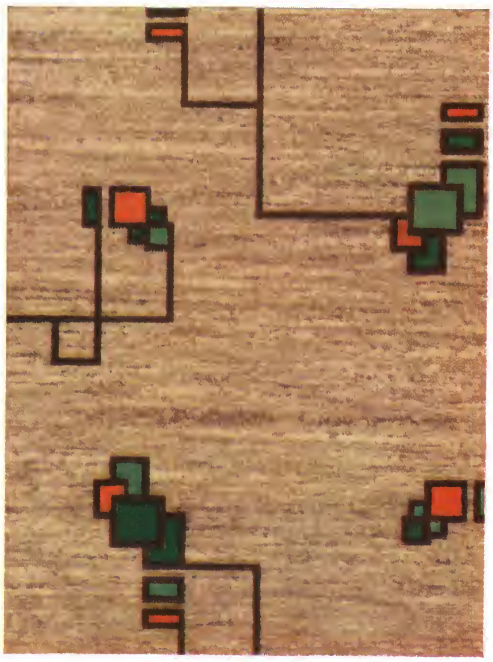
BIRD CHROMALIN PATTERNS

The versatility of design and color treatment shown in the Chromalin line of patterned floor coverings offers splendid material for the planning of unusual and interesting floors.

This floor covering, too, comes in both 8/4 (two yard) and 12/4 (three yard) widths.

Only four of these patterns are illustrated. There are over twenty other Chromalin Patterns available in tile effects, marbleizations, moderns, and texture type design.

No. 346—2 yds. wide, 8/4
No. 0346—3 yds. wide, 12/4



No. 461—2 yds. wide, 8/4 only

DECORATIVE COLORFUL FLOORS

adapted for use in the modern home.

BIRD CHROMALIN JASPÉ

NO. 32
TURQUOISE BLUE

NO. 30
CHROME GREEN

NO. 53
FRENCH BLUE

NO. 54
GRAY

NO. 35
RUST

NO. 56
BLACK

NO. 33
POWDER BLUE

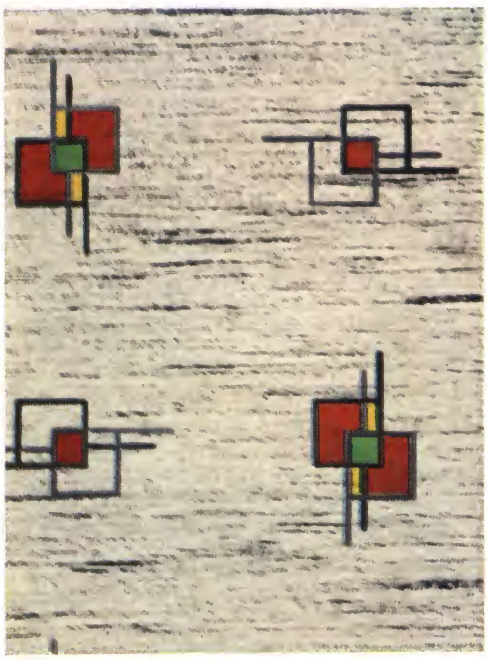
NO. 50
LEAF GREEN

NO. 51
TAN

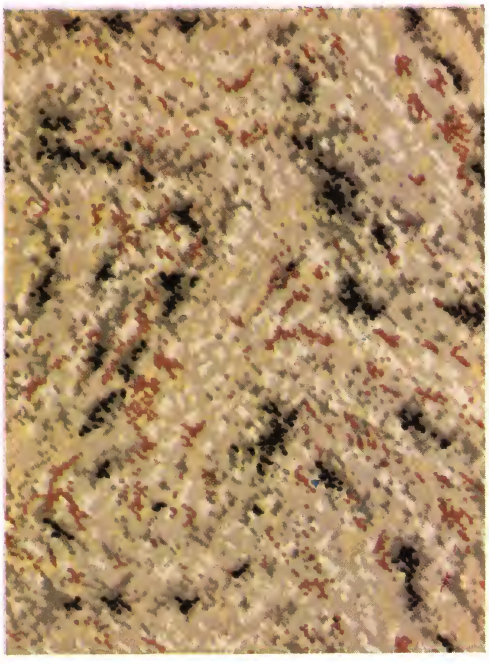
NO. 31
SEAL BROWN

Whether used alone or with border and feature stripping or Chromasets (*see pages 6 and 7*) countless interesting and attractive floor treatments are possible with Plain and Jaspé Chromalin.

BIRD CHROMALIN MARBLEIZED



No. 456—2 yds. wide, 8/4 only



No. 271—2 yds. wide, 8/4 only

The carefully selected "field color" tones of Marbleized Chromalin blend beautifully with any type of modern interior. Available in two widths—8/4 (two yards wide) and 12/4 (three yards wide).

●

Bird & Son, Inc. will be glad to furnish a sample book, showing accurate color reproductions on request to our main or branch offices.

CUSTOM MADE
CHROMASET

BIRD CHROMASETS

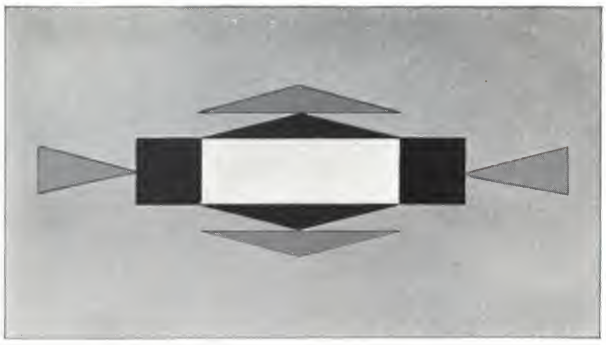
A wide selection of Chromasets is available as standard products. These range in size from 5 to 18 inches. One-, two- and three-color combinations in squares, circles, and assembled borders, distinctive floor plan units and custom designs made to order, offer splendid material for the design of interesting and colorful floor treatments.

Bird Chromasets are all perfectly cut, assembled, and mounted on a cheesecloth backing ready to be laid. To install them it is simply necessary to score around the outside edge (circle or square) and set the Chromaset into the cut-out area, tight and perfectly fitted.

CUSTOM MADE

Chromasets can be made up especially for any decoration problem. These illustrations are examples of recent installations. The Bird Design Service Department will gladly assist you by presenting carefully planned floor ideas.

COMPASS—18″



FLOOR PLAN UNITS

With the use of these simple design units, many interesting effects can be achieved. Illustrated are the star, the wave, and a two-triangle combination.

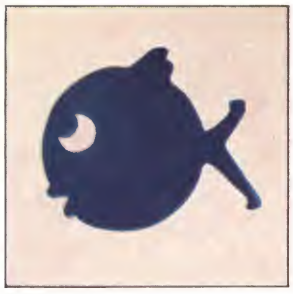
The following colors are offered. Eggshell, Black, Yellow, Turquoise Blue, Emerald Green, Crimson Red and Orange.

ASSEMBLED BORDERS

Available in the following combinations: Plain Black or Black Jaspé—with either eggshell, emerald green, crimson, turquoise blue, orange or yellow feature. One combination to a roll—50 lineal feet. Other border body colors and features made to order as follows: 7 in. body—1 in. feature—1 in. body

CORNER PIECE (9 IN.)

Available in packages—eight to a package, four of each combination in corresponding colors.



FISH—9″

FLOWER POT—9″

ANCHOR—9″

WREATH—9″

9 IN. CHROMASETS

Three to a package, one of each combination, except as noted.

Star—Black, Egg Shell and Crimson.
Bird†—Turquoise Blue and Yellow.
Tea Cup—(a) Black, Egg Shell and Crimson.
(b) Black, Egg Shell and Emerald Green.
Fish, Boat, Sea Horse,
Anchor and Wreath—Black, Egg Shell and Turquoise Blue.
Flower Pot—Black, Emerald Green and Yellow.
Water Jug—(a) Turquoise Blue, Egg Shell and Yellow.
(b) Black, Egg Shell and Crimson.
Geometric†—Black with Egg Shell, Emerald Green, Crimson, Turquoise Blue or Orange and reverse.

†*Four to a package. Two of each combination.*

18 IN. CHROMASETS

Compass and Ship's Wheel—Black and Egg Shell with Crimson or Turquoise Blue.
Tea Set—Black with Orange and Yellow or Turquoise Blue and Egg Shell.

Three to a package. One of each combination.

The use of feature stripes adds length and high spots to the displays.

COMMERCIAL USES OF
BIRD CHROMALIN FLOORINGS

Especially Recommended for Small Specialty Shops, Beauty Parlors, Show Rooms, Radio Stations, Tea Rooms, Offices and Foyers, and Other Similar Installations Where Traffic Conditions Are Moderate

Easy to clean, long wearing, absolutely waterproof, and with clear bright colors that extend all the way through to the backing, Bird Chromalin, if properly laid and cared for, will make a floor covering installation certain to give real and lasting satisfaction.

The one exception to this statement would be in cases where traffic conditions are too severe to permit satisfactory results from a medium-weight floor covering. Chromalin, at a fraction of the price, is not expected to give the same wear as heavy linoleums. But for installations where initial cost is an important factor and normal conditions prevail, there is no more efficient, more decorative floor covering on the market today than Bird Chromalin.

CHROMALIN APPLICATION

Lay Chromalin over suspended wood or concrete floors or metal, but not over wood or concrete floors directly in contact with the ground, or below grade.

PREPARATION OF FLOOR

Wood floors should preferably be double floors, the top boards of well seasoned, dry, tongued and grooved flooring, not over 4 in. wide and toe nailed.

Old wood sub floors having worn or loose boards should be repaired and nailed, and sanded if necessary to remove unevenness and high edges of the floor boards. Oil, varnish, wax, and heavy applications of paint should be removed by washing with Oakite, etc., and thoroughly rinsed and sanded.

Concrete sub floors must be fully cured and should be clean and smooth. Test for dryness. Fill cracks and joints with plaster or Paris crack flour.

APPLICATION OVER WOOD FLOORS

Keep Chromalin at 70° F. for 24 hours before unrolling. Lay on its side before unrolling. Building should be maintained at 70° F. while laying. Over the floor, preferably across the boards, lay Bird ¾-lb. Lining Felt. Fit carefully to the side walls and butt the joints. Paste, using a notched rubber spreader, with linoleum paste, carefully covering all areas, and roll thoroughly with a 150-lb. roller. Over the lining felt roll out a length of Chromalin, fitting the first length to the side wall, preferably across the lengths of lining felt. Avoid seams in the Chromalin over seams in the lining felt. Spread linoleum paste as before and roll thoroughly. Lay the second length slightly lapping the first and cut through the lower sheet, using the upper edge as a guide. Complete the floor with additional lengths of Chromalin, rolling each to obtain adhesion over all areas, and weight the seams.

OVER CONCRETE FLOORS

Chromalin may be laid directly, using lineolum paste, or by first laying Bird ¾-lb. Lining Felt, proceeding as described for wood floors.

OVER METAL

Clean the metal of all oil, grease, paint and scale, down to the metal itself. Lay directly, using B. & B. Chemical Company No. 292 C Cement.

PROTECTION AND CARE

Chromalin should be protected from legs of chairs by swivel gliders of 2 in. diameter and office desk chairs by 2 in. rubber ball-bearing casters.

Wash the floor as necessary with mild soaps and rinse carefully. Waxing is recommended. For commercial installations "hot" waxing is preferred. Ordinarily a solvent or a self-polishing wax will be sufficient.

NOTE: *It is advisable to have installations made by Bird Authorized Contractors.*

PERMATRED

THE NEW BIRD FLOOR COVERING

. . . Remarkably Moderate in Price
. . . Unusually Durable
In Sheet Form or in 9″ and 12″ Tiles

RED—36 Ins. Wide
9″ and 12″ Tiles

BLACK—36 Ins. Wide
9″ and 12″ Tiles

GREEN—36 Ins. Wide
9″ and 12″ Tiles

BROWN—36 Ins. Wide
9″ and 12″ Tiles

FOR OFFICE AND INDUSTRIAL BUILDINGS, STORES, WAREHOUSES, SCHOOLS, HOSPITALS, GAME ROOMS

WHAT IS PERMATRED?

Permatred is a new development in the field of resilient floor coverings. It is an economical product, designed primarily for commercial and industrial floors where economy, durability, and ease of cleaning and upkeep are essential requisites.

Permatred is a tough mastic made of very finely ground mineral and coloring pigments, the particles of which are held together by strong natural and synthetic binders, such as pitch and resin. This wearing surface is applied to a base of heavy asphalt-saturated fourdrinier felt, which is commercially waterproof and will not rot under ordinary floor conditions.

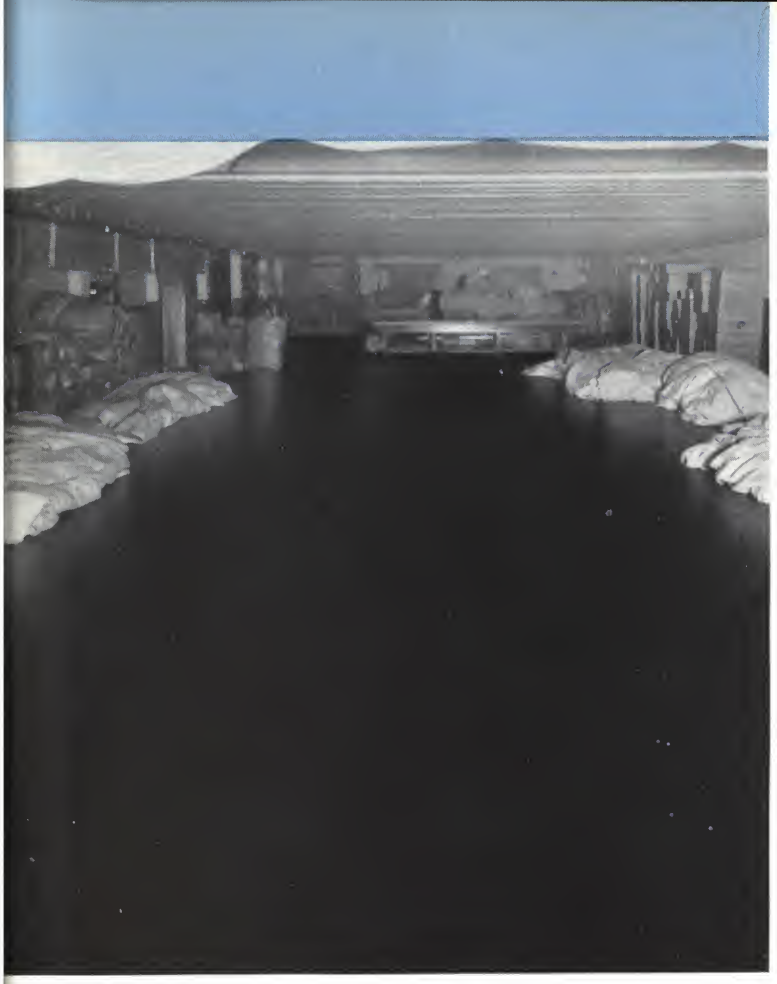
Permatred is to be used to prolong the life and reduce the cost of maintenance of any type of commercial or industrial floor. The wearing surface is of the thermoplastic type, which is so well known for its durability; it will show dents, mars, and scratches under rough treatment and use, but because of the self-healing nature of the wearing surface it will retain its value and utility.

Permatred is made in attractive plain colors in rolls 36 in. wide, and in tiles. Additional decorative effects may be obtained by the use of Chromalin Borders, Feature Strips, and Chromasets with Permatred.*

USES

Permatred is particularly suitable for office buildings and can be used satisfactorily in stores, either in front or behind the counters, except where oil or grease might be spilled on the floor. It is recommended for use in schools, hospitals, public buildings, factory buildings, and warehouses. In the case of factory buildings and warehouses, however, particularly where the material is to be subjected to heavy loads and rough treatment, the surface undoubtedly will become marred and dented, but it will withstand severe use and retain its utility, protecting the floor and providing a surface which is free from splinters and dusting, and one which is attractive and easy to clean.

Refer to pages 6 and 7 this catalog on Chromasets.



WHERE PERMATRED MAY BE LAID

Over wood or concrete floors, above grade, which are well ventilated beneath. Over concrete floors on or below grade, floors which are normally dry and where no water pressure exists; if floors are wet or excessively damp, Permatred should not be laid. Permatred should be kept at a temperature of 70° for 24 hours before unrolling.

PREPARATION OF FLOORS

Wood floors should be clean and free from loose or splintered boards. Nails should be set below the surface and the cracks filled. Sanding is the best way to smooth high spots; the smoother the floor the better will be the appearance of the Permatred.

Concrete floors above grade should be steel-trowel finished, fully cured, and clean. Cracks and crevices should be filled and smoothed. If floor tests alkaline, wash with a 10% solution of muriatic acid and allow to dry.

Concrete on or below grade should be tested for alkalinity. Sprinkle a few drops of 1% phenolphthalein or ethyl alcohol on various parts of the floor. If these turn pink, wash the floor with 10% solution of muriatic acid and allow it to dry. Prepare the floor as for above grade application.

MATERIALS FOR LAYING

Linoleum pastes and cements are *not* suitable for laying Permatred. For wood and concrete floors above grade we recommend *Bird Cut-Back Asphalt Cement*. For on or below grade application use only Bostik 292 C Cement for cementing Permatred, proceed in special cases with 421 A Bostik Primer.

LAYING OVER WOOD FLOORS AND CONCRETE ABOVE GRADE

Roll out a length, preferably across the floor boards, and fit to walls. If laid lengthwise of floor boards, be careful not to have a seam over a joint in the wood floor. Sand bag the first length in place, roll out a second length, overlapping the edges slightly and, using the top edge as a guide, cut through the under sheet. Using Bird Cut-Back Asphalt, cement the first length in place and proceed with laying of the floor. Roll the Permatred thoroughly.

LAYING OVER CONCRETE ON OR BELOW GRADE

If the conditions as to dampness are as prescribed, proceed with the laying as in the case of above grade applications, using 292 C Bostik Cement for cementing the Permatred. Use a smooth-edged spreader, spread evenly to obtain a continuous film, avoiding thick or thin spots. The success of the installation depends upon completely covering the entire floor with cement. Any uncovered area may cause failure of the installation.

Over concrete floors which are crumbly or which prevent the 292 C Bostik Cement from wetting the concrete apply 421 A Bostik Primer with a smooth-edge spreader, being careful to cover the entire area including all corners, and allow the 421 A Primer to dry over night. Take pains to roll in the Permatred thoroughly before the 292 C Bostik Cement has lost its tack.

LAYING TILES

Use the same materials and directions as for Permatred in rolls.

CARE AND MAINTENANCE

Wash with soaps such as Ivory or Lux and rinse thoroughly with clean water. Use a self-polishing or water wax for refinishing. Do not use sweeping compounds which contain oil.

Legs of tables, desks and chairs should be equipped with proper casters or gliders to prevent denting. For office chairs ball-bearing swivel casters with 2 in. rubber wheels are recommended.

NOTE: *It is advisable to have installations made by "Bird Authorized Contractors."*

BIRD AND SON, inc.

Established 1795

FLOORING DIVISION

EAST WALPOLE, MASS.

NEW YORK CHICAGO

BIRD PRODUCTS

The great number and variety of Bird Products testify to the vast manufacturing experience supporting every article you use, made by Bird & Son, inc.

The most familiar Bird Products are Asphalt Roofings and Building Papers, Asphalt Mineral Surfaced Shingles and Sidings, printed Felt Base Floor Coverings, Solid Fibre and Corrugated Shipping Containers, Shoe Cartons, Paper Flower Pots and Index Board.

Form No. 338 1—CH—DJ Printed in U. S. A.

Congoleum-Nairn's 1939 Issue of

SEALEX FLOORS AND WALLS

TRADEMARK REGISTERED

SEALEX LINOLEUM
Stain proof Easily Cleaned
SATISFACTION GUARANTEED OR YOUR MONEY BACK

Personalized Floors of SEALEX LINOLEUM

SEALEX WALL-COVERING
Stain proof Easily Cleaned
SATISFACTION GUARANTEED OR YOUR MONEY BACK

CONGOLEUM-NAIRN INC. ARCHITECTURAL SERVICE DEPARTMENT

GENERAL OFFICE

195 Belgrove Drive
Kearny
New Jersey

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DISTRICT OFFICES

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Pittsburgh	San Francisco
Philadelphia	Boston
Kansas City	Dallas
Minneapolis	Atlanta

GENERAL INFORMATION, Complete information, specifications and color charts are included in our catalogues "Resilient Floors" (A.I.A. File No. 23j) and "Sealex Wall Linoleum" (A.I.A. File No. 28c). A staff of trained architectural representatives is always ready to consult with you on your specific resilient flooring problems.

SEALEX LINOLEUM

WHAT IT IS

Sealex Linoleum is an exceedingly durable, resilient flooring manufactured to comply in every respect with the exacting requirements of the U. S. Government specification for linoleum. It is made from only the best grades of linseed oil, driers, gums, cork and wood flour, and pigments. These ingredients are combined by the Sealex process into a material of dense yet resilient composition. All minute pores are *sealed*, creating a perfectly smooth, sanitary surface that is stain-proof and easy-to-clean.

WHAT IT COSTS

Its moderate first cost makes Sealex Linoleum a most desirable floor, not only for commercial areas, but also for residential buildings. In modernization work, underfloors may be prepared for the installation of Sealex Linoleum with a minimum amount of time and expense.

The only maintenance required is an occasional washing and waxing, which keeps it looking new for years, even under the heaviest foot-traffic. The expense of periodic painting or refinishing of wood floors mounts higher in the long run than the installation cost of Sealex Linoleum.

HOW IT IS INSTALLED

SEALEX LINOLEUM — Without Adhesive Back: Over smooth wood floors, Sealex Linoleum should be cemented over Dry Congo Felt Lining, in 1 lb. weight, or Congo Saturated Felt Lining. Over concrete floors, Sealex Linoleum should be cemented directly to the floor without the use of lining felt.

ADHESIVE SEALEX LINOLEUM: This material is applied in the same manner as Sealex Linoleum without adhesive back, except that no lining felt should be used. No additional paste is required, since the adhesive is factory applied, and can be activated with a bristle brush and water immediately before applying to the underfloor.

SEALEX INSETS: These are installed by using the Inset itself as a template. The workman simply lays the Sealex Inset in the desired location, scribes around it, removes the scored material, then puts the Inset in its place.

SEALEX WALL LINOLEUM: This material should be installed on dry white-coat plaster walls, and cemented in place with Sealex No. 310 Adhesive. Where such backing is not available, installation may be made over gypsum type board materials approved by Congoleum-Nairn Inc.

IMPORTANT: Sealex Linoleum should never be installed on floors of wood or concrete which are in direct contact with the ground, or are below grade unless special precautions are taken to prepare the underfloor. Complete information will be sent upon request. For detailed specifications, see pages 10, 14 and 15.

WHAT KINDS THERE ARE

SEALEX VELTONE LINOLEUM: Unusual beauty in "all-over" decoration makes Sealex Veltone universally acceptable for fine homes as well as for commercial and institutional areas. With their rich blending of colors, Sealex Veltones do not show tracked-in dirt or footprints, making this flooring as practical as it is decorative.

SEALEX INLAID LINOLEUM: Richly veined and colored, Sealex Inlaids offer a distinctive variety of patterns designed to meet the most exacting decorative requirements. The large scale designs are especially favored for public buildings, offices, lobbies and shops. And there is a wide selection of smaller designs, handsome and appropriate for every type of residential interior.

SEALEX BATTLESHIP LINOLEUM: Its outstanding durability makes Sealex Battleship Linoleum ideal for areas where foot-traffic is heaviest. Corridors, Office Working Spaces, School Rooms, Gymnasiums, Stores and Assembly Halls can be permanently covered with Sealex Battleship.

SEALEX PLAIN LINOLEUM: Embodying the same characteristics as Sealex Battleship Linoleum, Plain Linoleum is available in a wide variety of colors, and affords architects the opportunity of designing custom floors for those areas where individual treatment is required.

SEALEX JASPÉ LINOLEUM: Durable enough for the traffic of commercial areas, Sealex Jaspé Linoleum is also sufficiently decorative for residential use.

SEALEX WALL LINOLEUM: Here's the same beautiful, washable material as Sealex Linoleum for floors — perfectly adapted into a permanent wall treatment. This material has been subjected to the practical test of service in the field over a period of several years and its remarkable acceptance places it among the important materials in the decorative field. Stain-proof and crack-proof, it retains its original beauty with no refinishing.

SEALEX "PERSONAL-IZED FLOORS": Designed-to-order floors at practically ready-made cost! Personal-ized Floors are created through the use of Sealex Insets and Sealex Feature Strips and Borders. These Sealex Linoleum Insets are available in a wide variety of sizes, colors, and designs —all color-correlated to blend with the key colors in Sealex Linoleum patterns. When Sealex Insets are installed they become a permanent part of the finished floor.

HOW WE SERVE YOU

We maintain a staff of trained architectural representatives, located throughout the country, who are always at the service of owners, architects, and contractors. These men will be pleased to consult with you at any time on your flooring problems. Write to—Architectural Service Department, Kearny, N. J. No obligation, of course.

WEIGHT, GAUGE AND COLOR TABLES

SEALEX VELTONE LINOLEUM

(See page 4 for color card)

COLOR	3/16" Gauge 4.76 mm. (.183-.193 inch)	1/8" Heavy Gauge 3.18 mm. (.120-.130 inch)	Medium Gauge 2.40 mm. (.090-1.00 inch)	Standard Gauge 2.00 mm. (.074-.084 inch)
VanDyke Brown	Not made	2901	Not made	Not made
White with Red	Not made	2902	Not made	7202 A7202
Ivory with Blue	Not made	2937	6937	7237 A7237
Light Green	1941	2941	6941	7241 A7241
Taupe	Not made	2951	Not made	Not made
Black and White	1959	2959	6959	7359 A7359
Dark Brown	1968	2968	6968	Not made
Orange & Black	1970	2970	6970	Not made
Dark Green	1972	2972	6972	Not made
Light Gray	1974	2974	6974	Not made
Mahogany Red	1976	2976	6976	7376 A7376
Medium Blue	Not made	2977	6977	7377 A7377
Sienna	1978	2978	6978	Not made
WhitewithBlack	1980	2980	6980	7380 A7380
Medium Brown	Not made	2983	6983	7383 A7383
Monochromatic Blue	Not made	2988	Not made	7388 A7388
Verde Antique	1989	2989	6989	Not made
Neutral mixture	Not made	2994	Not made	7394 A7394

SEALEX PLAIN LINOLEUM

(See page 5 for color card)

Pattern No.	Color	1/8" Gauge 3.18 mm. (.120-.130 inch)	Medium Gauge 2.40 mm. (.095 inch)	Standard Gauge 2.00 mm (.079 inch)
1100	Craft Brown	See 1/8" Battleship—1000 series	x	x
1101	Moss Green		x	x
1102	Terra Cotta		x	x
1103	Slate Gray		x	x
1104	Mahogany		x	x
1105	Black		x	x
1110	Yellow	x	x	x
1113	Ivory White	x	x	x
1114	Pacific Blue	x	x	x
1116	Olympic Blue	x	x	x
1118	Coffee Brown	x	x	x
1119	Jade Green	x	x	x
1120	Ivy Green	x	x	x
1122	Cherry Red	x	x	x
1123	Pearl Gray	x	x	x
1124	Citron Green	x	x	x
1125	Coronation Blue	x	x	x
1126	Orange	x	x	x
1127	Crimson	x	x	x
1128	Emerald Green	x	x	x
1129	Coral	x	x	x
1130	Pigskin	x	x	x
1131	Marine Blue	x	x	x

SEALEX INLAID LINOLEUM

(See page 6 for color card)

Sealex Inlaid Linoleum is manufactured in several weights, but only the Heavy Gauge is recommended for "commercial" uses—that is, in stores, public buildings, institutions, etc. Actual thicknesses of the various gauges are as follows:

	Inches	Mm.
Heavy Gauge	.125	3.18
Medium Gauge	.095	2.40
Standard Gauge	.079	2.00

Where decimal inch tolerances are given in these tables they are the upper and lower limits for the respective gauges, as established by U. S. Government standards.

SEALEX BATTLESHIP LINOLEUM

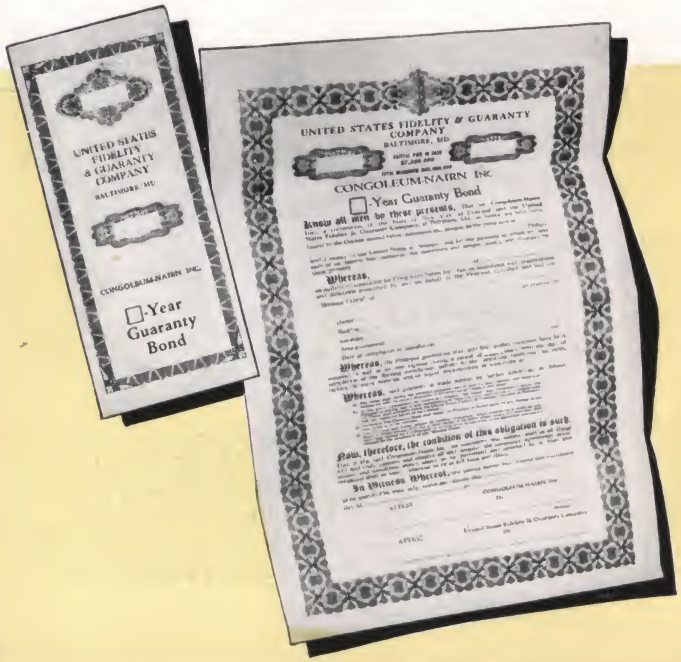
(See page 5 for color card)

Pattern No.	Color	6.00 mm. Gauge 6.00 mm. (.230-.240 inch)	3/16" Gauge 4.76 mm. (.183-.193 inch)	1/8" Gauge 3.18 mm. (.120-.130 inch)
1000	Craft Brown	x	x	x
1001	Moss Green	Not made	x	x
1002	Terra Cotta	Not made	x	x
1003	Slate Gray	Not made	x	x
1004	Mahogany	Not made	x	x
1005	Black	Not made	x	x

SEALEX JASPÉ LINOLEUM

(See page 5 for color card)

Pattern No.	Color	3/16" Gauge 4.76 mm. (.183-.193 inch)	1/8" Gauge 3.18 mm. (.120 .130 inch)	Medium Gauge 2.40 mm. (.095 inch)
1251	Taupe	x	x	x
1252	Dark Gray	x	x	x
1253	Tan	x	x	x
1254	Brown	x	x	x
1255	Light Gray	x	x	x
1256	Dark Green	x	x	x
1258	Rose Glow	Not made	x	x



THE GUARANTY BOND

Bonded Floors and Walls

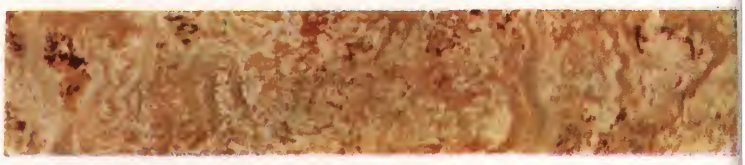
When Sealex Linoleum or Sealex Wall Linoleum is installed by an authorized contractor of Bonded Floors or Bonded Walls, the full value of workmanship and materials is backed by a Guaranty Bond. What better assurance of complete satisfaction could there be to architect, contractor and client. Certainly, such a guarantee can be offered only by a thoroughly responsible concern . . . one sure of its materials and installation methods.

CONGOLEUM-NAIRN INC.

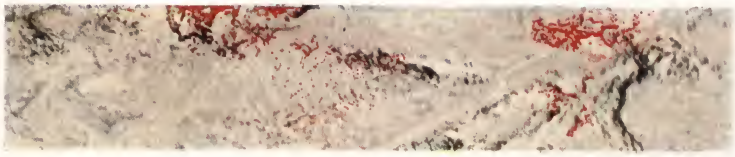
SEALEX VELTONE LINOLEUM

Pattern Numbers Given Are for 1/8" Heavy Gauge

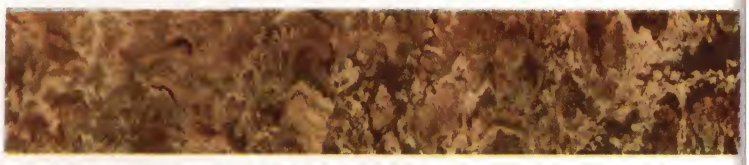
"RUTLAND" No. 2980



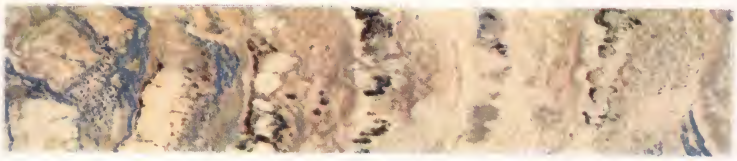
"SIENNA" No. 2978



"SPARTA" No. 2902

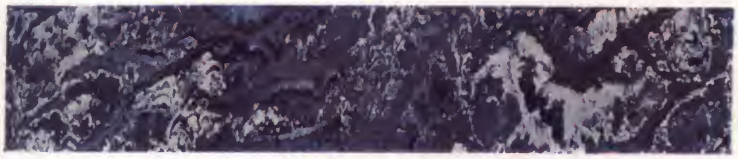


"TANGIER" No. 2983

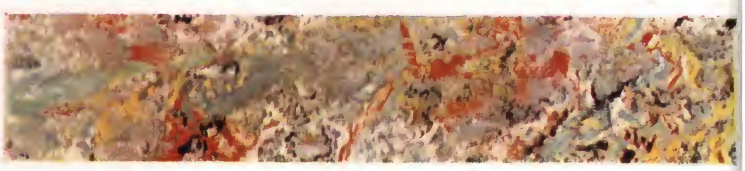


"TRIESTE" No. 2937

"VAN DYKE BROWN" No. 2901

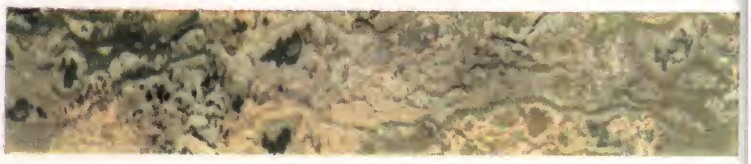


"DELFT BLUE" No. 2977



"KENYON" No. 2994

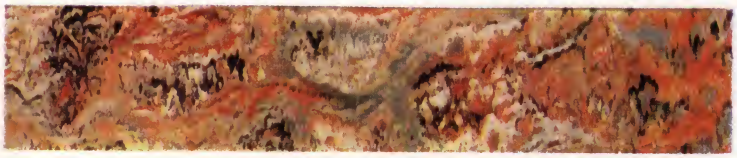
"NITE" No. 2988



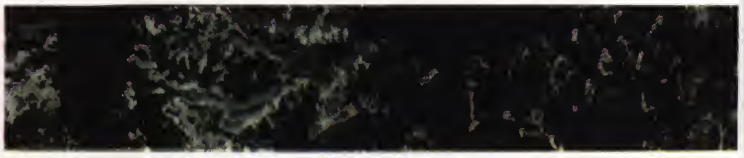
"MARSH GREEN" No. 2941

"SEPIA TAUPE" No. 2951

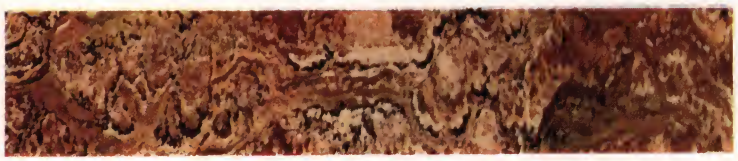
"EVERGREEN" No. 2972



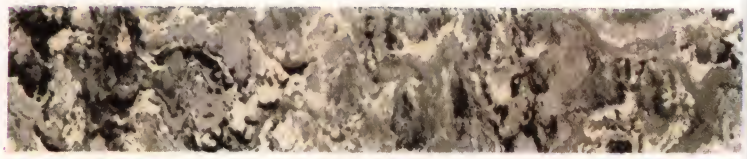
"TIBET" No. 2970



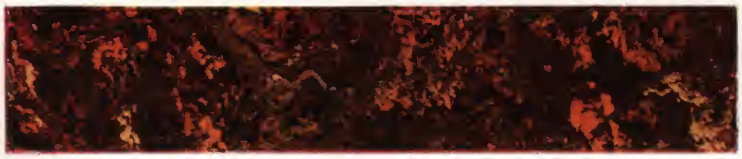
"VERDE ANTIQUE" No. 2989



"CIRCASSIAN" No. 2968



"PAISLEYGRAY" No. 2974



"MAHOGANY RED" No. 2976

"VULCAN" No. 2959

SEALEX JASPE LINOLEUM

"Brown" No. 1254

"Dark Gray" No. 1252

"Tan" No. 1253

"Light Gray" No. 1255

"Taupe" No. 1251

"Dark Green" No. 1256

"Rose Glow" No. 1258

SEALEX BATTLESHIP AND PLAIN LINOLEUM

"Ivory White" No. 1113

"Yellow" No. 1110

"Pigskin" No. 1130

"Craft Brown" Nos. 1000 and 1100

"Coffee Brown" No. 1118

"Mahogany" Nos. 1004 and 1104

"Citron Green" No. 1124

"Jade Green" No. 1119

"Emerald Green" No. 1128

"Ivy Green" No. 1120

"Moss Green" Nos. 1001 and 1101

"Olympic Blue" No. 1116

"Pearl Gray" No. 1123

"Slate Gray" Nos. 1003 and 1103

"Black" Nos. 1005 and 1105

"Coronation Blue" No. 1125

"Marine Blue" No. 1131

"Pacific Blue" No. 1114

"Coral" No. 1129

"Orange" No. 1126

"Crimson" No. 1127

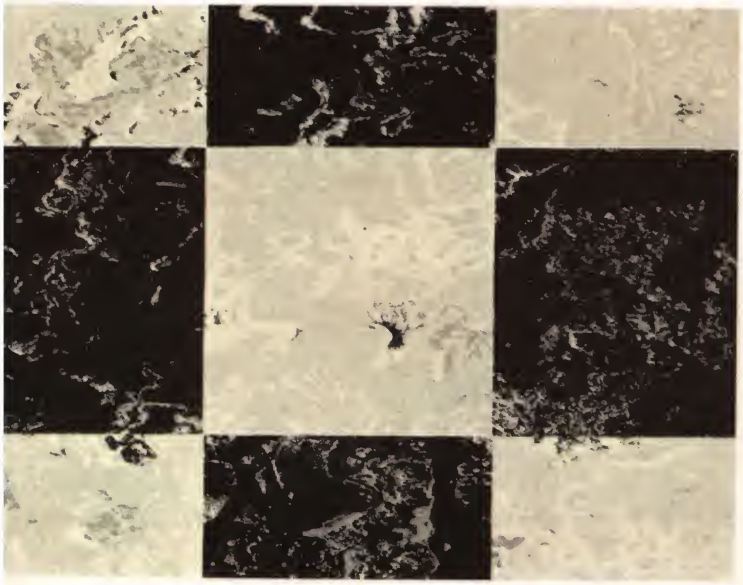
"Cherry Red" No. 1122

"Terra Cotta" Nos. 1002 and 1102

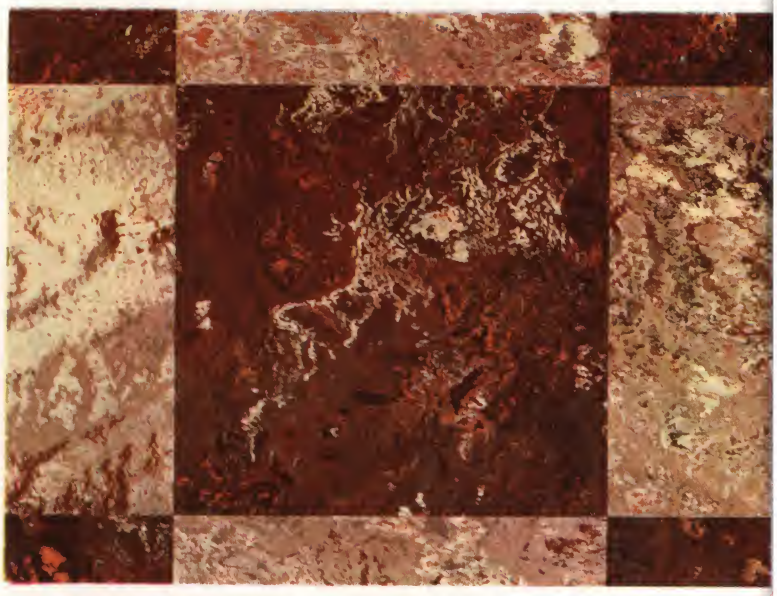
CONGOLEUM-NAIRN INC.

SEALEX INLAID LINOLEUM

The Resilient Floors Catalogue shows the wide range of designs and colorings available. A copy will be furnished you on request.

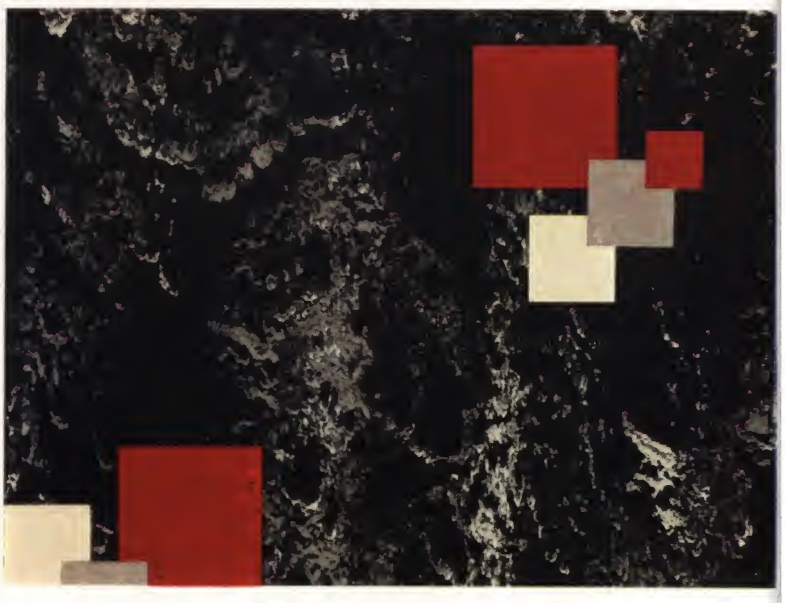


"FOYER" No. 3104—Heavy Gauge



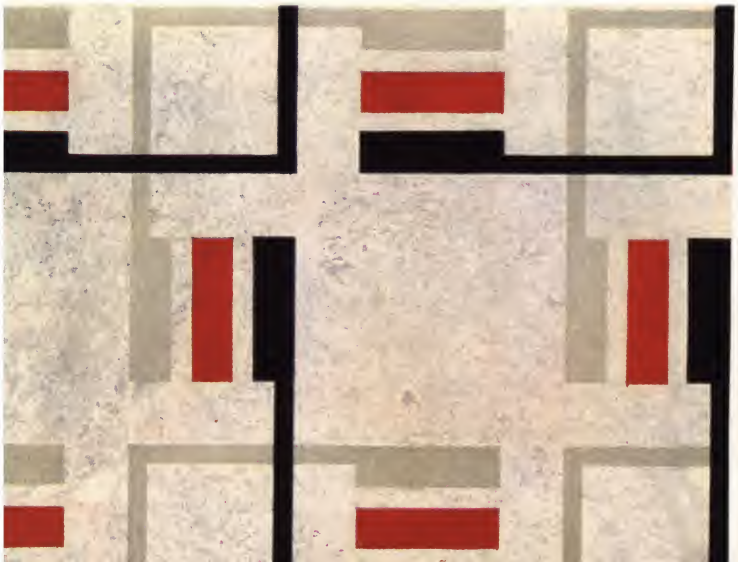
"CHATEAU" No. 3256—Heavy Gauge

"REVERE" No. 6015—Medium Gauge



"ANSONIA" No. 6070—Medium Gauge

"GREGORY" No. 7523—Standard Gauge



"BRISTOL" No. 7508—Standard Gauge

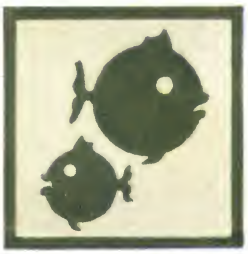
SEALEX PERSONAL-IZED* FLOORS

"CHERRIES" No. P35

"SCOTTIE DOG" No. P32

"PEASANT FLOWER" No. P37

"STAR IN CIRCLE" No. P38



"BLOW FISH" No. P31

"CORNER KEY" No. P42

This Personal-ized Floor uses Sealex Feature Strips of Crimson and White linoleum to frame amusing figures of athletes, cleverly made from stock Sealex Insets—Leaves, Discs and Squares. The floor is Sealex Veltone, "Nite," Pattern No. 2988. The walls are Sealex Wall Linoleum, No. 7988.

To the architect interested in creating original floor effects, Congoleum-Nairn offers a new and important development — *Personal-ized Floors* of Sealex Linoleum. This innovation has been made possible through the introduction of *prefabricated* Sealex Insets, Feature Strips and Borders. When used with Sealex Veltone or Plain Linoleum, these "Personal-izing" units provide almost limitless design possibilities. Here are designed-to-order floors at ready-made cost!

Sealex Insets are available in sizes ranging from 2″ to 18″ and are made in a variety of 31 different design motifs, a few of which are illustrated on this page. All Sealex Insets are available in a variety of colors and are *correlated* to blend with the key colors in Sealex Linoleum patterns, thus assuring authentic color unity. When Sealex Insets are installed, they become a permanent part of the finished floor.

Now, with the advent of *Personal-ized Floors*, Congoleum-Nairn places in your hands the first opportunity to design individual, "custom-cut" floors even for those clients with most modest budgets! We will be pleased to furnish your office with complete information concerning these "Personal-izing" units.

*Trademark Registered, U. S. Pat. Off., Congoleum-Nairn Inc.

SMALL SEALEX INSETS

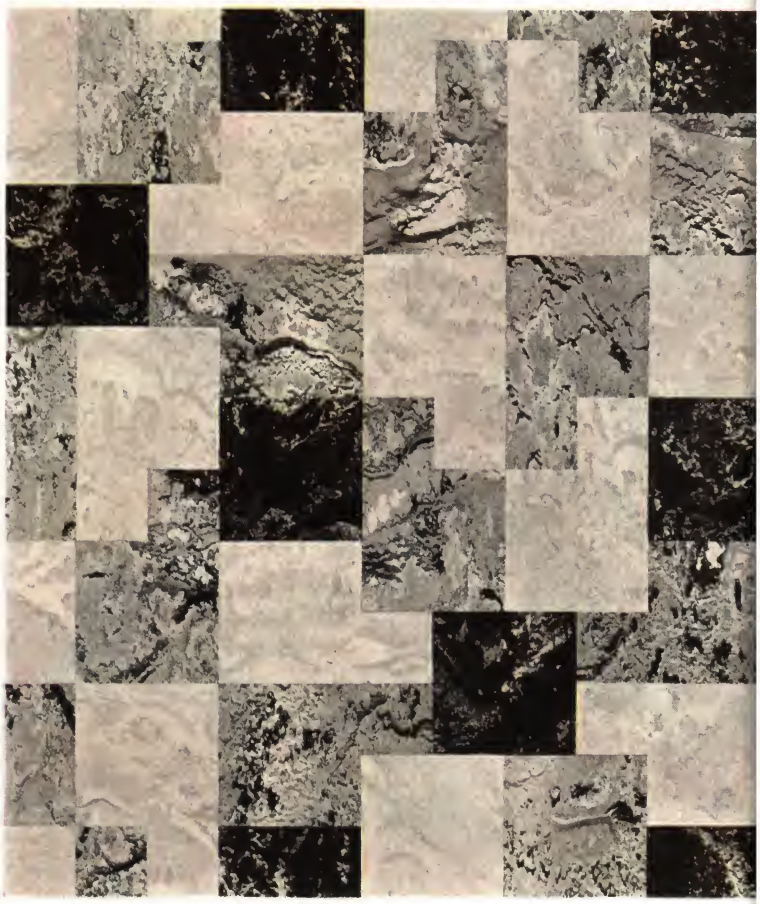
"DISCS" No. P302 | "SQUARES" No. P304 | "LEAVES" No P305 | "CRESCENTS" No. P303 | "CHEVRONS" No. P306 | "DIAMONDS" No. P308 | "STARS" No. P301 | "HEXAGON" No. P307

CONGOLEUM-NAIRN INC.

ADHESIVE SEALEX LINOLEUM

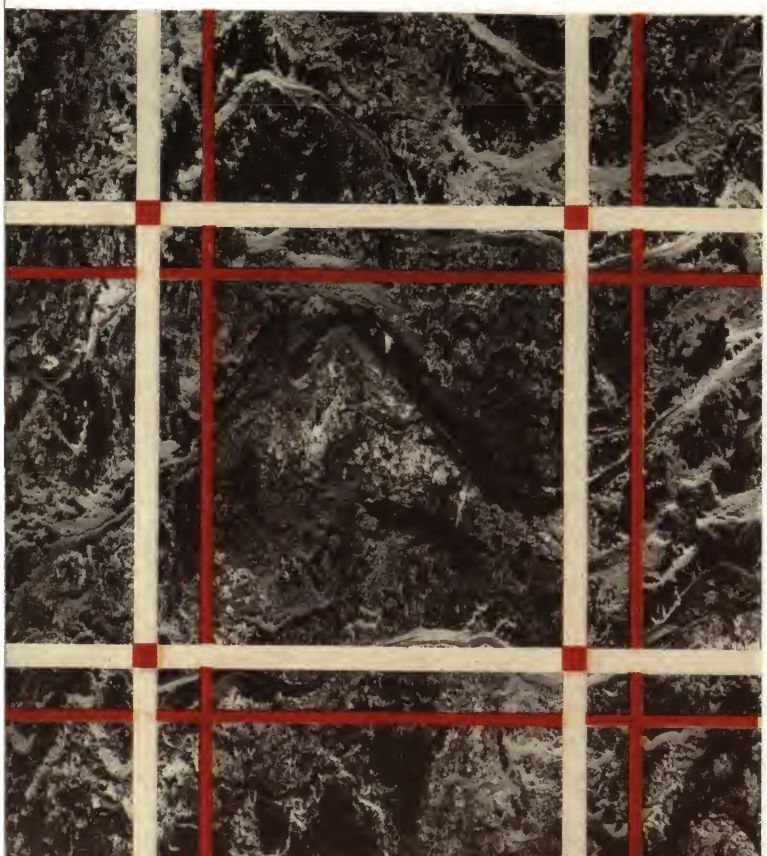
The Resilient Floors Catalogue shows the wide range of designs and colorings available. A copy will be furnished you on request.

"DUMAS"—Pattern No. A7512—Standard Gauge



"PALERMO"—Pattern No. A7432—Standard Gauge

"BLACKBURN"—Pattern No. A7488—Standard Gauge



"PUEBLA"—Pattern No. A7526—Standard Gauge

ADHESIVE SEALEX LINOLEUM

This modern development in the inlaid linoleum field has a new and specially prepared, factory-applied adhesive on the back. Installed according to the specifications below, every square inch of Adhesive Sealex Linoleum grips the floor like a vise, insuring a permanent job.

Because this revolutionary new floor-covering insures the strongest and most permanent installation, we recommend the application of Adhesive Sealex Linoleum directly to either wood or concrete floors (above grade) without the use of lining felt. It also eliminates the use of messy paste pails and the heavy roller. Much time and expense are thus saved. Remember, however, that regardless of installation method used, no linoleum floor can be smoother than the underfloor to which it conforms.

Its mechanical advantages are only a part of the interesting story of the new Adhesive Sealex Linoleum. Design and color experts have kept pace by introducing sparkling correlated colors into choice patterns appropriate to this marked advancement in the inlaid linoleum industry.

Architects will be especially pleased with the decorative flexibility, sanitary, easy to clean, time and money saving features which ideally adapt Adhesive Sealex Linoleum to residential construction or re-modeling projects. Sold by dealers in cities and towns throughout the United States, its introduction has increased the use of inlaid linoleum by thousands of satisfied consumers.

SPECIFICATIONS FOR LAYING

The linoleum contractor shall furnish and install the materials hereinafter specified on all sub-floor areas as follows:

1. MATERIALS: (a) *Linoleum*: The Linoleum used to be Congoleum-Nairn Adhesive Sealex Linoleum, ... Gauge, Pattern No. ....., and must bear the manufacturer's name and grade of the linoleum. The materials shall be subjected to a temperature of not less than 70° F. for at least 24 hours before installation.

2. UNDERFLOORS: Please refer to page 15 for detailed specifications covering the preparation of underfloors, both wood and concrete.

3. APPLICATION OF MATERIALS: On the sub-floor thus prepared, install Adhesive Sealex Linoleum direct to the underfloor. The widths of the linoleum should be laid crosswise to the floor boards. Where this cannot be done, the linoleum should be laid so that the seams do not coincide with cracks in the underfloor. The successive widths should be fitted and applied one at a time until the room is covered.

After each width is cut to fit, half of the width is turned back and the adhesive activated with a soft bristle brush and warm water. Care should be taken to be sure that all of the adhesive is uniformly and completely activated.

The activated half of the width is then turned back into place on the floor and pressed down all over with foot pressure. The remaining half of the width is then turned back and similarly activated and applied.

Successive widths should be installed so that the pattern matches and slightly overlaps, to permit the proper cutting of seams, using the upper width as a guide for cutting the under width. After the seam is thus cut and trimming removed, the activating and installing process is carried out as with the first width. Proceed with successive widths in the same manner.

4. CLEANING AND CARE OF LINOLEUM: Immediately after completion of installation, clean the surface of the linoleum with a damp cloth, allow floor to dry thoroughly and apply one or two coats of Sealex Self-Polishing Wax.

5. BRIEF SPECIFICATIONS: On all underfloors as indicated on plans and/or as called for in the specifications, apply Adhesive Sealex Linoleum, ...Gauge, Pattern No. ....., in accordance with the manufacturer's specifications. The use of merchandise known as remnants will not be allowed. The underfloor shall be smooth and free from inequalities, and Adhesive Sealex Linoleum applied in accordance with the manufacturer's approved method of application.

Activating the adhesive. Read instructions above.

Trimming the seam. Read instructions above.

CONGOLEUM-NAIRN INC.

SEALEX TREADLITE LINOLEUM TILE

DESCRIPTION: Where decorative floors expressing the individuality of the client are desired, plain and marbleized Sealex Treadlite Linoleum Tile is a ready answer to the architect's problem.

These tiles are obtainable in eleven plain colors and ten marbleized effects. See the following page for color card.

Sealex Treadlite Linoleum Tile offers numerous decorative possibilities through the combination of two or more colors in tiles of various sizes and shapes.

USES: In addition to its decorative features, Sealex Treadlite Linoleum Tile is durable, resilient, easy to clean and economical to maintain. It is, therefore, suitable for use in such areas as:

Corridors	Assembly Halls
Court Rooms	Public Buildings
Aisles	Private Offices
Sales Rooms	Clubs

WEIGHT AND SIZES: Sealex Treadlite Linoleum Tile is manufactured in one weight or thickness, namely $\frac{3}{16}$ in.

It is made in these standard sizes:

4x 4 in.	4x 8 in.	¼x 4 in.
6x 9 in.	6x12 in.	¼x 6 in.
9x 9 in.	9x18 in.	¼x 9 in.
12x12 in.	12x24 in.	¼x12 in.
18x36 in.	36x36 in.	¼x36 in.
1x36 in.	1½x36 in.	2x36 in.

Special sizes for the assembling of special designs will be quoted upon request.

HOW INSTALLED: Sealex Treadlite Linoleum Tile is installed by authorized contractors of Bonded Floors, in accordance with the manufacturer's specifications. It is adaptable for use over concrete underfloors.

GUARANTY BOND: When installed over concrete by authorized contractors of Bonded Floors, Sealex Treadlite Linoleum Tile carries a Guaranty Bond issued by United States Fidelity & Guaranty Company—guaranteeing workmanship and material for a period of five years.

COMPLETE CATALOGUE:

Congoleum-Nairn Inc. has an architectural catalogue covering the entire subject of Resilient Floors of the cork composition type. If you do not have this in your 23-J-AIA File we will be glad to furnish a copy on request.

★

Below: A floor of Sealex Treadlite Linoleum Tile which completely harmonizes in design and color with this interior. Decoratively correct, these floors are entirely businesslike in performance. Sealex Treadlite Linoleum Tile is a favorite choice of business organizations which make a selection only after thorough tests to determine how to get the *most* for their floor-covering dollar.

SEALEX TREADLITE LINOLEUM TILE

SEALEX TREADLITE LINOLEUM TILE is obtainable in these Plain Colors

Colonial Buff
No. 1056

Mahogany Brown
No. 1004

Craft Brown
No. 1000

Ivory White
No. 1057

Moss Green
No. 1001

Pacific Blue
No. 1036

Fawn Gray
No. 1050

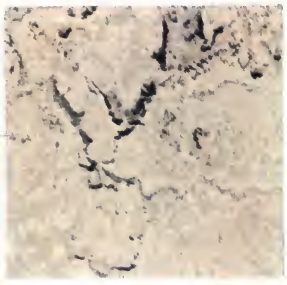
Slate Gray
No. 1003

Terra Cotta
No. 1002

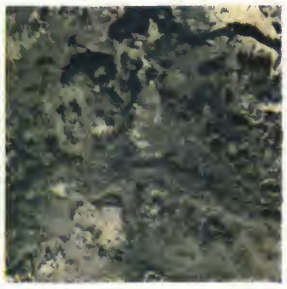
Stone Gray
No. 1015

Black
No. 1005

SEALEX TREADLITE LINOLEUM TILE is obtainable in these Marbleized Effects

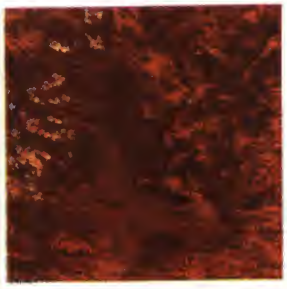

White Mottled Black
No. 1180

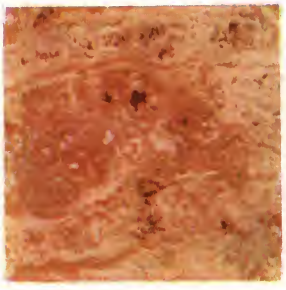
Black Mottled White
No. 1159

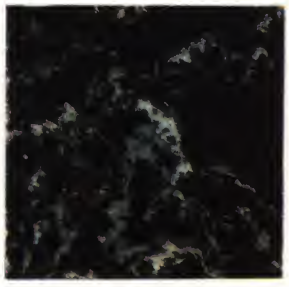

Marshgreen
No. 1141

Dark Sienna
No. 1168

Green Mottled Red & Black
No. 1170


Mahogany Red
No. 1176


Light Sienna
No. 1178


Verde Antique
No. 1189

Evergreen
No. 1172

Paisleygray
No. 1174

CONGOLEUM-NAIRN INC.

SEALEX WALL LINOLEUM

A Permanent Decorative Material

DESCRIPTION: Sealex Wall Linoleum is the same beautiful, washable, permanent material as Sealex Linoleum for floors—adapted into an ideal wall treatment. This versatile product is processed in much the same way as Sealex Veltone Linoleum, except that the composition is thinner and the backing is closely woven cotton sheeting. Sealex Wall Linoleum's desirable flexibility and strength enable it to withstand ordinary expansion and contraction with no damage whatsoever. This material will follow curves in the wall and can be bent around columns, pilasters and rounded corners without difficulty.

Sealex Linoleum on both floors and walls makes this kitchen at once modern and practical. The walls are Sealex Wall Linoleum, "Marble White," No. 7977. Baseboard is "Black," No. 1105. Field pattern of Personal-ized Floor is "Corinth," No. A7231. Sealex "Disc" and "Leaf" Insets and ready-cut Feature Strips in accenting correlated colors. Drainboards are covered with "Orange" Sealex Linoleum, No. 1126.

USES: Quickly cemented into place, Sealex Wall Linoleum is as desirable for modernizing work as it is for new construction. For homes, apartment houses, business buildings or institutions, Sealex Wall Linoleum affords beautiful walls at moderate cost. And there is an appropriate color for every type of room.

MAINTENANCE AND ECONOMY: Sealex Wall Linoleum has a smooth, washable surface that is impervious to dirt. It is water and stain-resistant and its inlaid colors cannot wear off or fade. Sealex Wall Linoleum is a *permanent* building material that requires a minimum of maintenance. No repapering, repainting or refinishing!

GENERAL SPECIFICATIONS

On all walls and ceilings as indicated on the plans and/or as called for in the specifications, supply and install Sealex Wall Linoleum as follows:

MATERIALS: Wall Linoleum—The wall linoleum shall be Congoleum-Nairn's Sealex Wall Linoleum, Pattern No.....

ADHESIVE: The adhesive for bonding wall linoleum to underwall shall be Congoleum-Nairn's Sealex Wall Linoleum Adhesive No. 310.

WORKMANSHIP: Installation of Sealex Wall Linoleum shall be performed by an approved Congoleum-Nairn dealer and in accordance with manufacturer's prescribed methods.

TREATMENT OF WALL LINOLEUM AT CORNERS: Interior corners shall be rounded—or—squared; exterior corners shall be rounded—or—squared, as shown on the plans and/or in the specifications.

ALLOWANCE FOR THICKNESS OF WALL LINOLEUM: An allowance of approximately 1/8" for thickness of wall linoleum shall be made at all abutments, such as wall fixtures (especially bathroom equipment), door jambs, window frames, baseboards, etc.

CLEANING: Upon completion of installation, the surface of the wall linoleum shall be thoroughly cleaned with lukewarm water and mild soap.

GENERAL CONDITIONS: No Sealex Wall Linoleum shall be applied in a room where the temperature is under 70 degrees F. Sealex Wall Linoleum will not be applied to walls the exterior face of which is in contact with the ground, unless such walls shall have been membrane-water-proofed and furred out and shall test dry in accordance with specifications of the manufacturer of the wall-covering.

BRIEF SPECIFICATIONS: On all plaster walls as indicated on plans and/or as called for in specifications, apply Sealex Wall Linoleum Pattern No..... The wall linoleum shall be installed in accordance with the manufacturer's specifications.

(For detailed specifications see page 14.)

SEALEX WALL LINOLEUM

"Parchment"—No. 7973

"Sardonyx"—No. 7963

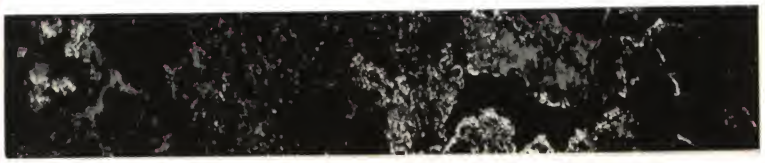
"Maize"—No. 7987

"Carnelian"—No. 7958

"Coral"—No. 7975

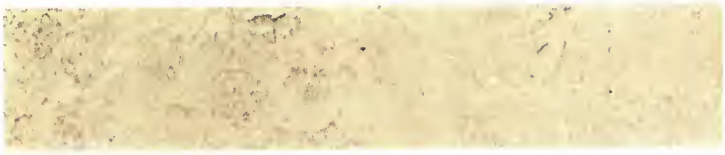
"Rose Agate"—No. 7989

"Green Onyx"—No. 7985



"Black Onyx"—No. 7959

"Light Pine"—No. 7981

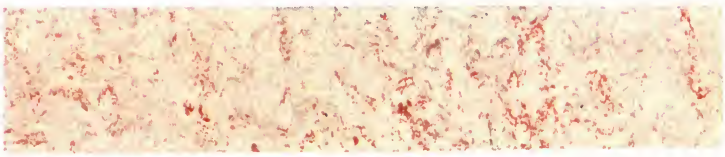


"Marble White"—No. 7977

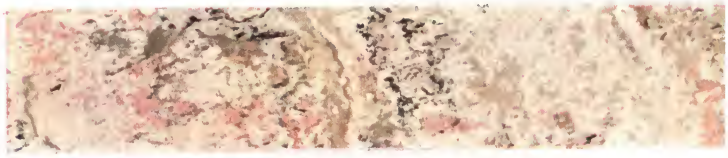
"Cerulean"—No. 7993

"Tourmaline"—No. 7994

"Green Beryl"—No. 7971

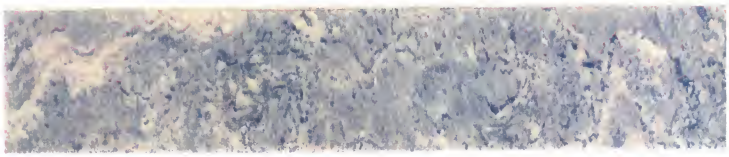


"Tarian Red"—No. 7992



"Sunstone"—No. 7960

"Zircon"—No. 7972



"Azure"—No. 7988

"American Walnut"—No. 7982

CONGOLEUM-NAIRN INC.

SPECIFICATIONS . . . SEALEX WALL LINOLEUM

NEW WALLS

PLASTER—*Erection of Walls:* Walls and ceilings to receive Sealex Wall Linoleum as indicated on the plans and/or as called for in the specifications, shall be of good quality plaster with white coat finish, erected in such manner that when dry they shall be firm, hard and smooth.

Rough spots and trowel marks shall be sanded smooth with coarse sandpaper. Cracks or indentations shall be filled with Savogran Type A Cement, or equal, sanded to a smooth surface when dry.

Interior corners shall be (square, brought to a true plumb —or—rounded to a radius of 5/8″). Exterior corners shall be (square, brought to a true plumb—or—rounded to a radius of 5/8″). Explanatory note—in the case of interior corners it is not necessary to erect rounded plaster corners as the wall-covering itself will form the desired cove; provision for rounded exterior corners must be made in the plaster.

Before the application of Sealex Wall Linoleum, plaster walls shall test dry in accordance with Congoleum-Nairn's specifications for testing for moisture. Where called for, walls shall be primed with Sealex Wall Primer as specified by Congoleum-Nairn Inc. Testing of walls for dryness and the priming, if any, are to be performed by the wall linoleum contractor.

Brown coat and special patent plasters: If cement is added to the brown coat mix and if the surface is steel troweled to a smooth finish, the brown coat may be used as an underwall for Sealex Wall Linoleum. Patent plasters properly troweled are also suitable.

OLD WALLS

PREPARATION OF WALLS: Loose scaly paint, cold water paint or wall paper shall be removed. All grease and dirt shall be removed by washing with a washing soda or Oakite; rinse thoroughly with clear water and wipe dry.

Gloss-painted or enamel-painted surfaces shall be sanded with coarse sandpaper to afford satisfactory bond.

Broken plaster, holes, cracks or other small openings shall be patched with a non-shrinking plaster compound. Such patched areas shall be sanded to a smooth surface.

SHOWER STALLS

In standing shower stalls, the walls and ceilings, to receive Sealex Wall Linoleum as indicated on the plans or as called for in the specifications, shall be of Keene's Cement Waterproof Plaster or approved equal, erected to a true plane, free of any surface projections or indentations. Inside corners shall be sharp and plumb. Exterior corners of entrance jambs shall be rounded, using a 3/4″ radius metal corner. Soap receptacles, grab rails, etc., of the flush built-in type shall extend 1/8″ from face of the cement finish.

At the junction of plaster walls with recessed tubs, the plaster should be primed with Sealex Wall Primer above the tub for a distance of not less than 4″.

GYPSUM WALL BOARD WALLS

Walls and ceilings, to receive Sealex Wall Linoleum as indicated on the plans or as called for in the specification, shall be of 1/2″ recessed edge type Gypsum Wall Board utilizing a non-metallic tape and cement flush-joint system. Caution—do not use a loosely woven fabric tape.

FRAMING: Framing shall be in accordance with the manufacturer's specification. Special attention shall be given in properly lining up all studs and joists to provide a plane smooth surface. Supplementary 2″ x 4″ headers shall be provided on ceilings and walls to receive all horizontal joints. Proper grounds shall be provided where bathroom fixtures are to be installed.

For old plaster walls and ceiling, refer to the manufacturer's specification.

APPLICATION OF GYPSUM WALL BOARD: Gypsum Wall Boards shall be applied and nailed in accordance with the manufacturer's specification. Nails shall be cement coated 4d-1 3/8″. All recessed edges shall be face out and all boards applied at right angles to the studs and joists. Panels shall be in one piece as far as possible.

Around recessed bathtubs, the joint between the tub and the boards shall be left open 1/4″. This joint shall be grouted in by the linoleum contractor with a water resistant non-shrinking plastic compound.

JOINT TREATMENT: A non-metallic tape and cement flush-joint system shall be applied in accordance with the manufacturer's specification. Make certain that the center of the tape is placed exactly over the joint. Two applications of cement and two sanding operations shall be employed to provide a surface perfectly smooth and flush with the face of the boards.

Fill all cut end joints and other openings and spot all nail heads with cement. When dry, sand lightly to a perfectly smooth surface flush with the boards. Repeat this application.

APPROVAL OF GYPSUM WALL BOARD: All Gypsum Wall Board walls and ceilings to receive Sealex Wall Linoleum shall be subject to the approval of the Wall Linoleum contractor and shall be thoroughly primed with one coat of Sealex Wall Primer, except around tubs where two coats shall be applied.

RESPONSIBILITY: Neither Congoleum-Nairn nor the Sealex Wall Linoleum contractor will accept any responsibility for the proper erection of the Gypsum Wall Board walls and ceilings that are to receive Sealex Wall Linoleum. Any defects appearing at a later date resulting from improper nailing, movement of the boards and improper joint treatment, shall be the responsibility of others.

GUARANTEE

GUARANTY BOND: A Guaranty Bond covering both workmanship and material for a term of one year is obtainable on Sealex Wall Linoleum when installed by a Bonded Walls Distributor.

Please refer to A. I. A. File No. 28-c for samples of the complete line of Sealex Wall Linoleum. If your files do not include this sample folder, please write to: Contract Department, Congoleum-Nairn Inc., Kearny, New Jersey.

SPECIFICATIONS . . . SEALEX LINOLEUM

The linoleum contractor shall furnish and install the materials hereinafter specified on all subfloor areas as follows:

MATERIALS: *Linoleum:* The linoleum used to be Sealex Linoleum . . . . . , thickness . . . . . , Pattern No. . . . . , and shall be delivered on the job in full rolls, and shall conform to Federal Specifications LLL-L-351 or LLL-L-361. Every roll must be marked with the maker's name and grade of the linoleum. This material shall be subjected to a continuous temperature of 70° F. for at least 24 hours before installation.

Lining Felt: (To be used over wood underfloors only.) The felt shall be Congo Felt Lining, either unsaturated or asphalt saturated. The unsaturated lining felt shall weigh approximately one pound per square yard. The saturated felt shall have a minimum weight of approximately one and one-half pounds per square yard.

Adhesive: The adhesive for cementing the lining felt to the wood floor as well as the linoleum to the lining felt shall be Sealex Green Label Paste as manufactured by Congoleum-Nairn Inc., and this same adhesive shall be used for cementing the linoleum directly to the concrete underfloor and applied in accordance with manufacturer's instructions.

(A) WOOD UNDERFLOORS

UNDERFLOOR CONDITION: The underfloor must be smooth and even. The wood floor (if new) shall be furnished and installed by another contractor. The wood floor shall be a double floor, brought up to a surface . . . . . below the finished floor level. The lower boards of this double floor shall be thoroughly face nailed to the joists and laid diagonally over them. The top boards shall be thoroughly dry and well-seasoned tongue and groove lumber not more than 4″ wide (3¼″ face), laid at right angles to the floor joists and toe-nailed with eight-penny steel-cut nails on 18″ centers.

On old wood floors, loose, defective or badly worn boards shall be replaced and face-nailed. On old or new floors any unevenness at butts or joints shall be scraped or planed smooth and even. Where it is necessary to smooth the underfloor by the sanding method, the wood floor shall be sealed after sanding with a thin coat of shellac.

No linoleum is to be laid under this specification over any wood floor which is below grade, directly in contact with the ground, or over an unexcavated area unless proper ventilation is provided between the underfloor and the ground.

APPLICATION OF MATERIALS: On the wood floor thus prepared, there shall be installed Congo Felt Lining either saturated or unsaturated, which shall be securely cemented to the floor with Sealex Green Label Paste. The felt is to be laid with carefully butted joints—all cross joints to be staggered. The felt shall be carefully cut to fit around all vertical surfaces. The felt shall be thoroughly rolled into the adhesive with a linoleum roller weighing 150 pounds.

Over the felt lining thus installed, Sealex Linoleum shall be applied. It shall be cut to fit the room accurately and neatly and shall be laid so as to have the fewest possible seams and in a manner to assure pattern match at longitudinal and cross seams. The linoleum shall be laid at right angles to the floor boards and care should be taken to avoid having the seams of the linoleum fall directly over the seams of the felt.

At junctions with vertical surfaces, the linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for ½ to ¾ inch lap at all seams for double cutting (see note below for pattern goods).

The linoleum shall then be cemented all over to the felt, using Sealex Green Label Paste and shall be rolled immediately from the center of the sheet out with a roller, weighing 150 pounds, to obtain complete adhesion and to remove all air bubbles.

(B) CONCRETE UNDERFLOORS

UNDERFLOOR CONDITION: The concrete floor shall be furnished to the linoleum contractor broom-clean and satisfactorily dry. The surface shall be a smooth, even, troweled-cement finish.

Standard Construction: On standard construction the concrete slab shall have a cement topping not less than 1½″ thick and a mix no leaner than one-part Portland Cement and three-parts clean screened sand. Expansion joints which are cut through the top layer of the cement shall be retroweled, furnishing an even top surface.

Monolithic Construction: On monolithic construction the concrete floor slab shall be troweled to a smooth side-walk finish, free from high and low spots.

On concrete floors where expansion joints have not been retroweled, they shall be filled in by the linoleum contractor with non-shrinking plastic material such as Savogran, Floorstone or equal, so that such joints will not show through the surface of the linoleum.

Installation of linoleum shall not proceed until tests have been made to assure that the floors are satisfactorily dry. These tests shall be conducted preferably with a Congoleum-Nairn Inc., concrete moisture content detector. No linoleum shall be laid under this specification over concrete which is below or on grade, or directly over the ground (unless ventilation is provided between the underfloor and the ground).

APPLICATION OF MATERIALS: On the concrete floor thus prepared, Sealex Linoleum shall be applied. It shall be cut to fit the room accurately and neatly and shall be laid so as to have the fewest possible seams and in a manner to assure pattern match at longitudinal and cross seams. At junctions with vertical surfaces, the linoleum shall be carefully scribed so as to form a tight joint at these points. Allowances shall be made for from ½ inch to ¾ inch lap at all seams for double cutting (see note below for pattern goods). The linoleum shall then be cemented all over directly to the concrete floor using Sealex Green Label Paste, and shall be rolled immediately from the center of the sheet out, with a roller, weighing 150 pounds. to obtain complete adhesion and to remove all air bubbles.

SEAMS: After the linoleum has thus been cemented to the floor with the seams properly lapped, the seams shall be cut through the two thicknesses and the edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to obtain a tight, even, workmanlike seam.

All seams and edges shall be thoroughly weighted down with sand bags to aid proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be cemented to the floor allowing approximately six inches lap where the seam is to be made. After the cemented area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least one hour to permit any shrinkage that might occur. Paste should then be applied to the floor under the lap and the linoleum cut through both thicknesses using a straight edge as a guide. During this operation, excessive bending of the linoleum should be avoided.

Note: Specifications for cutting seams where pattern goods are to be installed. The seams shall be only slightly lapped (not more than $\frac{3}{16}$ inch). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure a tight and sightly seam. This method of applying pattern goods must be followed to avoid distorting the pattern.

CLEANING OF LINOLEUM: The linoleum contractor shall remove all paste spots with a damp cloth, leaving the linoleum floor broom clean and in good condition.

PROTECTION: After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER: Without cost to the linoleum contractor the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done. He shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary power to clean and polish the floor.

GUARANTEE: The linoleum contractor shall guarantee the floor against all defects in material and workmanship for . . . . . years from date of the completion of the job.

The Nation's finest buildings require

Department of Justice Building

THE NATION'S FINEST FLOORS

IN the five beautiful Government buildings on this page, over 3,000,000 square feet of Sealex Linoleum will give permanent flooring satisfaction.

Sealex Linoleum rates "No. 1" for this type of installation on many counts. It is beautiful and dignified . . . quiet and comfortable underfoot. Yet Sealex Floors are moderate in first cost, remarkably easy to clean, and never need refinishing throughout their long life!

Installed by authorized contractors, Sealex Linoleum carries a guaranty bond fully covering the value of workmanship and materials. Let us send you complete information for your A.I.A. files.

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

Dept. of Agriculture—Main and Extensible Buildings

The Archives Building

Library of Congress

Apex Building

SEALEX LINOLEUM Floors and Walls

TRADEMARK REGISTERED

SECTION 11

CONTINUED ⟶

THE PARAFFINE COMPANIES, INC.

Manufacturers of Pabco Linoleum and Mastipave

475 Brannan Street, SAN FRANCISCO, CALIF.

BRANCH OFFICES

LOS ANGELES, CALIF. SEATTLE, WASH. PORTLAND, ORE. CHICAGO, ILL. NEW YORK, N. Y. SOMERVILLE, N. J.

THE COMPANY—The Paraffine Companies, Inc., established in 1884, is now in its 55th year of continuous, successful, specialized manufacture. In 1932, after many years experience in the manufacturing of several types of floor covering, the company entered the linoleum field. Millions of yards of Pabco Linoleums have since been installed in important buildings in every state.

MANUFACTURING FACILITIES—In the Pabco plant covering 55 acres in Emeryville, California, every modern facility is provided for the production of the highest quality linoleum.

DISTRIBUTION—Pabco Linoleums are available, through qualified floor covering dealers and contractors, in all the principal cities in the country.

SERVICE—Expert installation service is available in all territories through which architects and interior decorators may receive valuable assistance in the achievement of distinctive commercial and institutional floors.

Airplane View of Main Pabco Plant at Emeryville Calif., on the Shores of San Francisco Bay. A 125-acre Site, 55 Acres Occupied by Buildings

PABCO LINOLEUM—AN OUTSTANDING ACHIEVEMENT IN QUALITY AND COLOR FIDELITY

A COMPLETE LINE—Pabco Linoleums offer a wide choice in color, design and thickness to adapt their use to every specific flooring need. Included are a comprehensive line of Plain Colors, Jaspes, Cross-Directional Marbles and Onyxtone (all-over marble effect) and Inlaid Patterns, each described in detail on page 3.

QUALITY—Made from the highest quality of raw materials in a modern, straight-line production plant, Pabco Linoleums are unsurpassed in quality. The Pabco plant is the world's most modern linoleum factory. Its equipment includes air conditioned curing ovens which assure exact control of the important curing process. Constantly under strict laboratory control and supervision, the raw materials are carefully tested and each step in the manufacturing process is verified. All manufactured products are submitted to rigid inspection tests before marketing. Pabco quality and color are homogeneous from surface to burlap backing.

On page 2 is given a summary of authentic laboratory tests. In addition, page 2 also illustrates and describes the comprehensiveness of Pabco laboratory control.

PABCO COLOR FIDELITY—Made possible only by improved methods of manufacture and curing is the outstanding Pabco achievement of "color fidelity". Pabco colors are permanent and true with a depth, richness and purity hitherto unattained. Pabco "white" is the "whitest white." Pabco "blue" is a true, permanent, brilliant blue, known as "truest blue."

SAMPLES—Selections of patterns and colors should always be made from actual samples of the material. These are obtainable upon request.

ALL PABCO LINOLEUMS ARE FACTORY WAXED—Through the use of special equipment all Pabco Linoleums are factory waxed and burnished to a high gloss. Not only thus is the linoleum surface protected from injury during shipment and installation but the thoroughly waxed surface serves as a foundation for subsequent treatment after installation.

PABCO LINOLEUM GAUGES—Pabco Linoleums are made in the following standard gauges:

6MM	.235 gauge
$\frac{3}{16}$ in. thick	.187 gauge
$\frac{1}{8}$ in. Thick Heavy Inlaid	.125 gauge
Medium Inlaid	.095 gauge
Standard Inlaid	.079 gauge

LINOLEUM COSTS AND ECONOMIES—The installed cost of linoleum varies according to the gauge and type of pattern and amount of labor required for installation. Architects can obtain estimates from Pabco contractors for covering any floor area.

AUTHENTIC TEST PROVES PABCO QUALITY IS UNSURPASSED

The following summary of tests made by Pittsburgh Testing Laboratory, Pittsburgh, Pa., on Pabco $\frac{3}{16}$ in. Battleship Linoleum proves that Pabco quality surpasses Federal Specification LLL-L-351 requirements.

THICKNESS AND WEIGHT—An indication of firmness and durability. Federal Specification minimum and maximum thickness .182 in. and .192 in., minimum weight per sq. yd. 8 lb.—Pabco tested respectively .188 in., .196 in. and 11.03 lb.

PLIABILITY—An indication of ease of handling and laying. Samples bent around 2½ in. diameter mandrel. Federal Specification required no signs of cracking—Pabco meets fully this requirement.

KEYING OR BURLAP STRIPPING—Indicating cohesiveness of linoleum from base to surface. Load required to strip burlap backing. Federal Specification, 6 lb. pull—Pabco required 13½ lb. pull.

INDENTATION—An index to resilience and wear. Samples subjected to 80 lb. load with 0.282 in. diameter steel bar. Depth of indentation after load is removed 1 hr.—Federal Specification, .010 in.; Pabco, .002 in.

ABSORPTION—An index to maintenance cost. The samples were submerged in water for 24 hours. Per cent gain in weight. Federal Specification, 4.00%—Pabco, 1.58%.

PABCO LABORATORY TESTS AND CONTROL ASSURE UNIFORMITY

1. Composition Uniformity Test

1. This Rotap machine regulates the size of cork and other particles composing the "mix," thus insuring perfect uniformity in composition, all-important in good linoleum.

2. A single caster, weighted with iron discs totaling 125 pounds, is driven back and forth by machine over every sample, equaling fifteen years' normal wear in the home.

3. Showing the use of the Ingersoll Glarimeter to measure the reflection from the surface of Pabco Linoleum. Thus is the gloss of the burnished finish maintained.

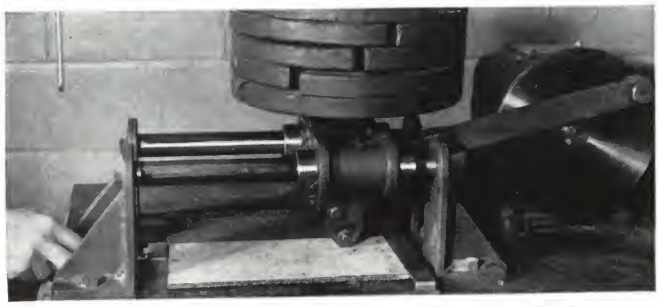
4. Here a strip of Pabco Standard Gauge Inlaid is tested against freezing pipes. At 40 degrees, Pabco is bent around a row of two-inch mandrels without cracking.

5. The Scott machine here registers the pounds "pull" required to strip the burlap from Pabco Linoleum. Pabco Linoleum greatly excels government requirements.

6. This equipment checks binding quality of the "mix"; flexibility of the composition; uniformity of curing; key of composition to burlap; bond between figures in pattern.

7. Here the Scratch Tester proves that Pabco Linoleum is thoroughly cured beneath the surface. No Pabco Linoleum is released for sale until it fully passes this test.

8. Pabco Linoleum cuts easily and evenly without breaking. The Scott Tester registers the "pull" in pounds necessary to cut linoleum under conditions faced by the layer.



2. How Will It Wear? Test Assures This Vital Quality

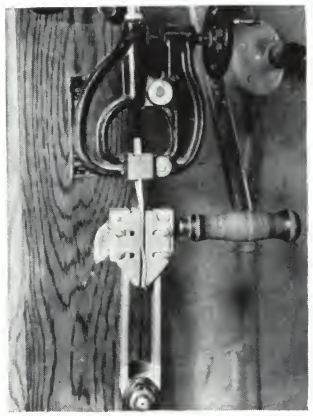
3. Testing Surface Gloss

4. Pabco Flexibility Test

5. Burlap Key Test

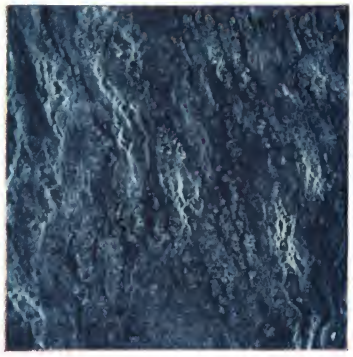
6. Soxhlet Extractor Test

7. Surface Scratch Test

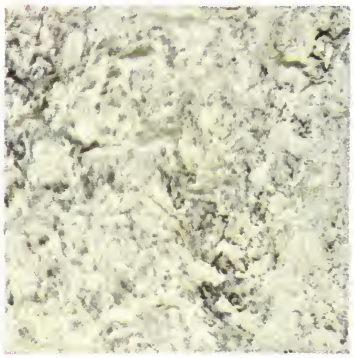


8. Pabco Cutting Test

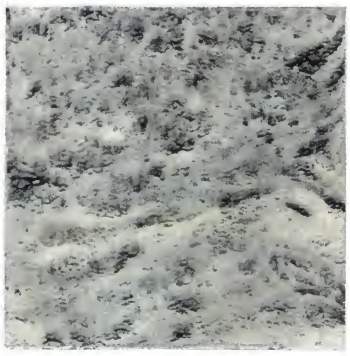
PABCO CROSS-DIRECTIONAL MARBLE AND ONYXTONE LINOLEUMS



No. 5011 Onyxtone
No. 4011 Cross-Directional



No. 5003 Onyxtone
No. 4003 Cross-Directional



No. 5010 Onyxtone
No. 4010 Cross-Directional

No. 5000 Onyxtone
No. 4000 Cross-Directional

PABCO HAND-PROCESSED, CROSS-DIRECTIONAL MARBLE INLAID

A linoleum that is actually self-decorating. Designs consist of alternating blocks, 9 in. square, so placed that the marble veining in one block is at right angles to the blocks adjacent to it. Thus, the entire floor, when laid, gives the appearance of individual marble tile. Seams between the sheets are concealed because these is no obvious break in the pattern. There is no matching problem in laying . . . no need for supplementary insets to kill monotony or to hide joints. The effect is that of a custom-built floor with nothing to mar its appearance or character. In addition, a wide choice of colorations in these hand-processed inlaids of Cross-Directional Marble adapts them to any decorative scheme. Typical color blocks are shown on this page. Standard rolls are 6 ft. wide by 90 ft. long.

PABCO ONYXTONE LINOLEUM

The color range of Pabco Heavy Guage Onyxtone All-Over Marble Linoleums is indicated on this page by the same blocks used to identify the Cross-Directional marble patterns. The same true rendition of marble veining is attained except that instead of being defined in 9 in. blocks, the Onyxtone pattern extends over the full six-foot width of the linoleum sheet. Onyxtones are made in heavy gauge (⅛ in. and .125 ga.). Standard rolls are 6 ft. wide by 90 ft. long.

PABCO PLAIN LINOLEUM

On page 4 is shown the complete color range of Pabco Plain Linoleums with the exception of white and black. Under each color is designated the various thicknesses or gauges available. The darker colors are recommended for office general floor areas, corridors, stairs and similar areas where utility is the prime requisite. The lighter color patterns, with their brilliant, clean, uniform colors, are unequalled for decorative effect and pleasing appearance in offices, stores and display room areas.

In addition to the nine (9) colors illustrated are the following:

No. 130 White—Made in ⅛ in. and standard gauges.

No. 115 Black—Made in $\frac{3}{16}$ in., ⅛ in. medium and standard gauges.

Standard rolls are 6 ft. wide by 90 ft long.

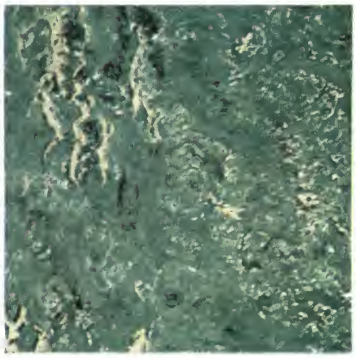
Recently, Pabco has added to its line an assortment of plain color, factory-cut feature strips in standard and ⅛ in. gauges—$\frac{5}{8}$, 1, and 1½ in. widths in rolls containing 45 lineal feet.

PABCO JASPE LINOLEUM

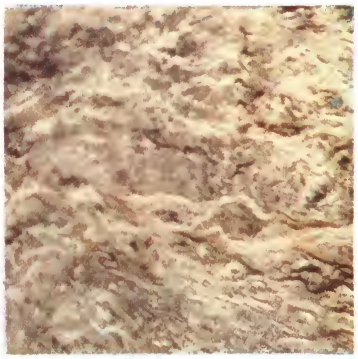
On page 4 are shown the four colors of Pabco Jaspe Linoleums together with their available thicknesses or gauges. Standard rolls are 6 ft. wide by 90 ft. long.

PABCO CORK CARPET

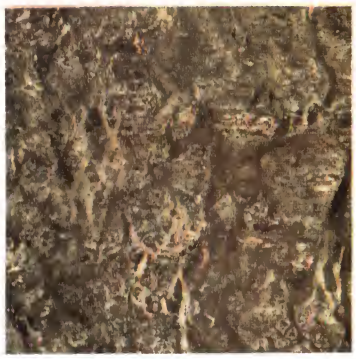
On page 4 are shown the two colors of Pabco Cork Carpet. This material possesses all of the high quality characteristics of Pabco Linoleums. Rolls are 6 ft. wide by 90 ft. long.



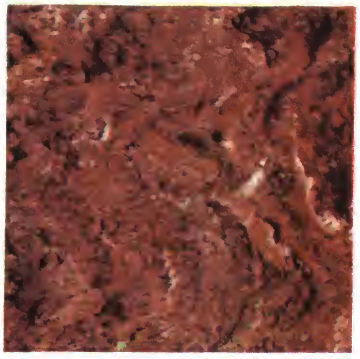
No. 5007 Onyxtone
No. 4007 Cross-Directional



No. 5009 Onyxtone
No. 4009 Cross-Directional



No. 5001 Onyxtone
No. 4001 Cross-Directional



No. 5005 Onyxtone
No. 4005 Cross-Directional

PABCO PLAIN AND JASPE LINOLEUMS AND CORK CARPETS

No. 100—BROWN
Made in the following gauges:
6 MM., 3/16", 1/8", Medium Plain, Standard Plain

No. 111—JADE GREEN
Made in 1/8" and Standard Gauges

No. 125—BLUE
Made in 1/8" and Standard Gauges

No. 136—YELLOW
Made in 1/8" and Standard Gauges

No. 106—GRAY
Made in the following gauges:
3/16", 1/8", Medium Plain, Standard Plain

No. 135—ORANGE
Made in 1/8" and Standard Gauges

No. 123—RED
Made in 1/8" and Standard Gauges

No. 110—GREEN
Made in the following gauges:
3/16", 1/8" Medium Plain, Standard Plain

No. 122—TERRA COTTA
Made in the following gauges:
3/16", 1/8", Medium Plain, Standard Plain

No. 201—LIGHT BROWN JASPE
Made in the following gauges:
3/16", 1/8", Medium

No. 205—GRAY JASPE
Made in the following gauges:
3/16", 1/8", Medium

No. 300—TAN CORK CARPET
Made in 1/4" Gauge

No. 200—DARK BROWN JASPE
Made in the following gauges:
3/16", 1/8", Medium

No. 210—GREEN JASPE
Made in the following gauges:
3/16", 1/8", Medium

No. 310—GREEN CORK CARPET
Made in 1/4" Gauge

THE PARAFFINE COMPANIES, INC.

LINOLEUM INSTALLATION SPECIFICATIONS

NOTE: *Linoleum should be specified only over suspended floor constructions, never over floors laid directly on the ground.*

(1) HEAT, LIGHT, POWER, ETC.—The Linoleum Contractor shall be furnished, without cost, hoisting service; the maintenance of at least 70° F. temperature within the building during the linoleum installation operation; light sufficient for efficient work; and the necessary power for electrical equipment.

(2) MATERIALS—All materials shall be as manufactured or furnished by THE PARAFFINE COMPANIES, INC., 475 Brannan St., San Francisco, Cal. as follows:

(2a) Linoleum—Pabco Linoleum *(specify gauge),* delivered on the job in full rolls. The material shall be subjected to a continuous temperature of 70° F. for at least 24 hours before installation.

(2b) Lining Felt—Pabco Super-Quality Saturated Lining Felt, 54 in. wide, weighing not less than 2¼ lb. per sq. yd. or Pabco Super Quality unsaturated Lining Felt, weighing 1½ lbs. per sq. yd.

(2c) Paste—Pabco Linoleum Paste.

(2d) Waterproof Cement—Pabco Waterproof Linoleum Cement.

(3) WORK INCLUDED

NOTE: *Here list the various areas to be covered and the type of linoleum to be installed in each. If borders, feature strips, insets, or other custom-built features are included, describe accurately or furnish and refer to design diagram.*

(4) SUB-FLOORS—Sub-floors in good condition shall be furnished by others, smooth, clean and dry ready for linoleum installation.

(4a) Wood Sub-floors—New wood sub-floors shall be brought to a level *(specify)* below the finished floor level and shall preferably consist of thoroughly dry, well seasoned tongue and groove lumber not more than 4 inches wide, preferably laid diagonally and thoroughly toe-nailed to each bearing with about 3/32 in. joints—close but not driven tight.

On old wood sub-floors, the loose, defective or badly worn boards shall be replaced and face nailed. Any unevenness shall be planed or sanded smooth.

(4b) Concrete Sub-floors—The surface shall be a smooth, even troweled cement finish. Linoleum installation shall not proceed until an adequate test proves that the floors are free from moisture.

(5) LINOLEUM APPLICATION—The linoleum applicator shall inspect all sub-floors to receive his material and shall only proceed when their condition is such as to assure a satisfactory installation.

(5a) Wood Floor Lining Felt—Over wood sub-floors lay a continuous thickness of lining felt thoroughly secured to the sub-floor with linoleum paste. Felt shall preferably be laid with the length at right angles to the direction of the floor boards, with carefully butted joints. Carefully cut felt to fit against all vertical surfaces. Thoroughly roll the felt into the adhesive with a linoleum roller.

(5b) Concrete Floor Expansion Joints—Fill all expansion or other joints in the concrete surface with plaster of Paris or other suitable material to provide a continuous smooth sub-floor surface.

(5c) Linoleum Laying—Over the *(felt) (concrete)* apply the linoleum; cut to cover the area with the fewest possible seams. At junctions with vertical surfaces, carefully scribe the linoleum to form a tight joint. Allow ½ to ¾ inch lap at all seams for double cutting. Secure the entire body of the linoleum to the floor area to within 4 inches of the joint or edge with Pabco linoleum paste and immediately roll the surface from the center out with a linoleum roller weighing at least 10 lb. to the linear inch of contact surface to assure complete adhesion and elimination of bubbles. Next the lapped seams shall be cut through the two lapped thicknesses to form an accurately straight, tight joint. Embed the joint and edge areas in Pabco linoleum paste and roll smooth to assure tight, practically invisible joints. Weight edges and joints thus cemented with sand bags until thoroughly set.

(6) CLEANING, POLISHING, ETC.—At completion of the installation, first clean from the linoleum surface any paste spots with a damp cloth. Clean the entire surface with a dry or slightly damp mop.

(6a) After cleaning, polish the pre-waxed linoleum surface with an electric polisher.

NOTE: *Under ordinary circumstances, due to the factory waxed and burnished surface of Pabco linoleum, the above is sufficient. Where desirable, use clause (6b).*

(6b) After cleaning, give the surface a light application of self-polishing wax and when dry, burnish with an electric polisher.

REPRESENTATIVE PABCO LINOLEUM INSTALLATIONS

ARKANSAS
U. S. Veterans Hospital, Fayetteville

CALIFORNIA
State Hospital, Los Angeles
Navy Yard, Mare Island
Board of Education, Los Angeles
Alameda County Court House, Oakland
Fox Film Corporation

FLORIDA
City Hospital, Tampa

GEORGIA
Teckwood Housing Project, Atlanta

IDAHO
Junior High School, Boise

ILLINOIS
Laurel Rug Cleaners, Chicago
Waukegan High School, Waukegan
Senior High School, Rock Island

IOWA
Fine Arts Building, Iowa City

KENTUCKY
A B C Levi Building, Louisville
LaSalle Courts Project, Louisville

LOUISIANA
U. S. Airport, Shreveport
Barksdale Hospital, Shreveport

MARYLAND
Rockville Elementary School, Rockville

MASSACHUSETTS
Old Harbor Village, South Boston
Worcester State Hospital, Worcester

MICHIGAN
Port Huron Hospital, Port Huron

MINNESOTA
University of Minnesota, Minneapolis
U. S. Post Office, Minneapolis
S & L Store Building, Mankato

MISSOURI
Main Post Office, St. Louis
Bank of Commerce, Kansas City

MONTANA
High School, Kalispell

NEBRASKA
Indian School, Lodge Pole

NEVADA
Lake Consolidated School, Lovelock
Supreme Court Building, Carson City

NEW JERSEY
Mt. Lakes Junior & Senior High School, Mountain Lakes

NEW MEXICO
Harwood School, Albuquerque
Court House, Lovington

NEW YORK
Bayside High School, New York City
Board of Education, Rochester
Board of Transportation, New York City
Radio City, Rockefeller Center

NORTH CAROLINA
Braughton High School, Raleigh

NORTH DAKOTA
Grand Forks High School, Grand Forks

OHIO
Ohio Coop. Farm Bureau, Columbus
Bell Telephone Co., Cincinnati

OKLAHOMA
Von Wedel Clinic & Hospital, Oklahoma City

OREGON
State Capitol, Salem
U. S. Veterans Hospital, Roseburg

PENNSYLVANIA
Elias Wilf Corp., Philadelphia
Montgomery Ward, Charleroi

TENNESSEE
Court House, Memphis

TEXAS
Library, Austin
U. S. Post Office, Dallas

UTAH
University Library, Salt Lake City

VIRGINIA
Navy Yard, Norfolk
First Baptist Church, Clifton Forge

WASHINGTON
Bellingham High School, Bellingham

WISCONSIN
U. S. Post Office, Milwaukee
Peterson & Loeffler, Milwaukee

WYOMING
U. S. Veterans Hospital, Sheridan

PABCO MASTIPAVE—A DURABLE, LOW COST, ATTRACTIVE FLOORING FOR INDUSTRIAL PLANTS, OFFICES, STORES AND INSTITUTIONS

COMPOSITION—Mastipave is a sheet mastic floor covering made of felt fibre saturated and coated with asphalt and laid with waterproof asphaltic cement.

ADAPTABILITY AND ADVANTAGES—Millions of yards of Mastipave in service throughout the world prove the remarkable durability of this floor covering in foot traffic areas. Mastipave is supplied in rolls and also in cut-tiles. It is designed for use in practically all types of industrial, commercial and institutional buildings. In stores, shops, offices and public buildings Mastipave tile in alternate units of contrasting colors with or without feature strips and borders are extremely attractive in appearance. When subjected to foot traffic only, Mastipave floors may be laid over concrete lying directly on the earth.

Durable—Mastipave is amazingly resistant to wear and abuse. It is rotproof, acid-resistant, vermin-proof and self-healing when cut. It is used successfully in golf club locker rooms, in buses and trains, on ramps in buildings—thousands of installations where the going is tough.

Resilient—Mastipave is resilient and quiet under foot.

Waterproof—Mastipave is waterproof and is laid with waterproof asphaltic cement.

Clean and Sanitary—Mastipave is non-absorptive with a smooth, durable surface easily cleaned and waxed; therefore sanitary.

Laid Over Any Base—All types of Mastipave may be laid over any sound smooth base, cemented directly to concrete, wood, or metal sub-floors.

Low in Cost—Mastipave is one of the lowest cost floor coverings available, considering its reasonable first cost and negligible maintenance expense.

Quickly and Inexpensively Installed—Installed only by authorized, experienced applicators, it is laid quickly without appreciable interruptions to operations or long delays in the use of floor areas. It is ready for service as soon as laid.

TYPES—Mastipave is made in two (2) distinct types:

(1) **Gloss Mastipave**—For general floor areas where a "safety" floor is not required.

(2) **Grip-Tread Mastipave**—A new type of floor covering for use on stair treads, steep inclines, trucking areas, and around hazardous machines in industrial plants. The material is composed of the same ingredients as Gloss Mastipave with the addition of a tough, finely screened abrasive introduced into the surface.

COLORS—Gloss Mastipave—Brown, Green, Red and Black. Grip-Tread Mastipave—Red only.

THICKNESS—Both types of Mastipave are .080 in. thick.

SIZES (AREA)—Gloss Mastipave (tiles) 9 in. x 9 in.; 9 in. x 18 in.; 12 in. x 12 in.; 18 in. x 18 in.; 36 in. x 36 in.; (rolls) 3 ft. x 75 ft. containing 25 sq. yds. Grip-Tread Mastipave—In rolls only, 3 ft. wide x 75 ft. long.

OFFICE LOBBY

SCHOOL ROOM

LABORATORY

DEPARTMENT STORE

RECREATION ROOM

STORE ROOM

TEXTILE FACTORY

MASTIPAVE INSTALLATION SPECIFICATIONS

NOTE: *Mastipave may be laid over any smooth, sound sub-floor base. Where subjected to foot traffic only, it can be laid over concrete laid directly over earth.*

(1) HEAT, LIGHT, POWER, ETC.—Same as paragraph (1), page 5.

(2) MATERIALS—All materials shall be as manufactured or furnished by THE PARAFFINE COMPANIES, INC., 475 Brannan St., San Francisco, Cal., as follows:

(2a) Floor Covering—Floor covering shall be Mastipave.

(2b) Adhesive—Mastipave Cement No. 21.

(2c) Adhesive Thinner—Mastipave Thinner No. 1081.

(3) WORK INCLUDED—NOTE: *Here list the various areas to be covered and the type of colors and sizes of Mastipave to be installed in each. If border, feature strips, etc., are included, describe accurately or furnish and refer to design diagrams.*

(4) SUB-FLOORS—Sub-floors in good condition shall be furnished by others, smooth, clean and dry, ready for the Mastipave installation.

(4a) Wood Sub-floors—Same as paragraph (4a), page 5.

(4b) Concrete Sub-floors—Same as paragraph (4b), page 5.

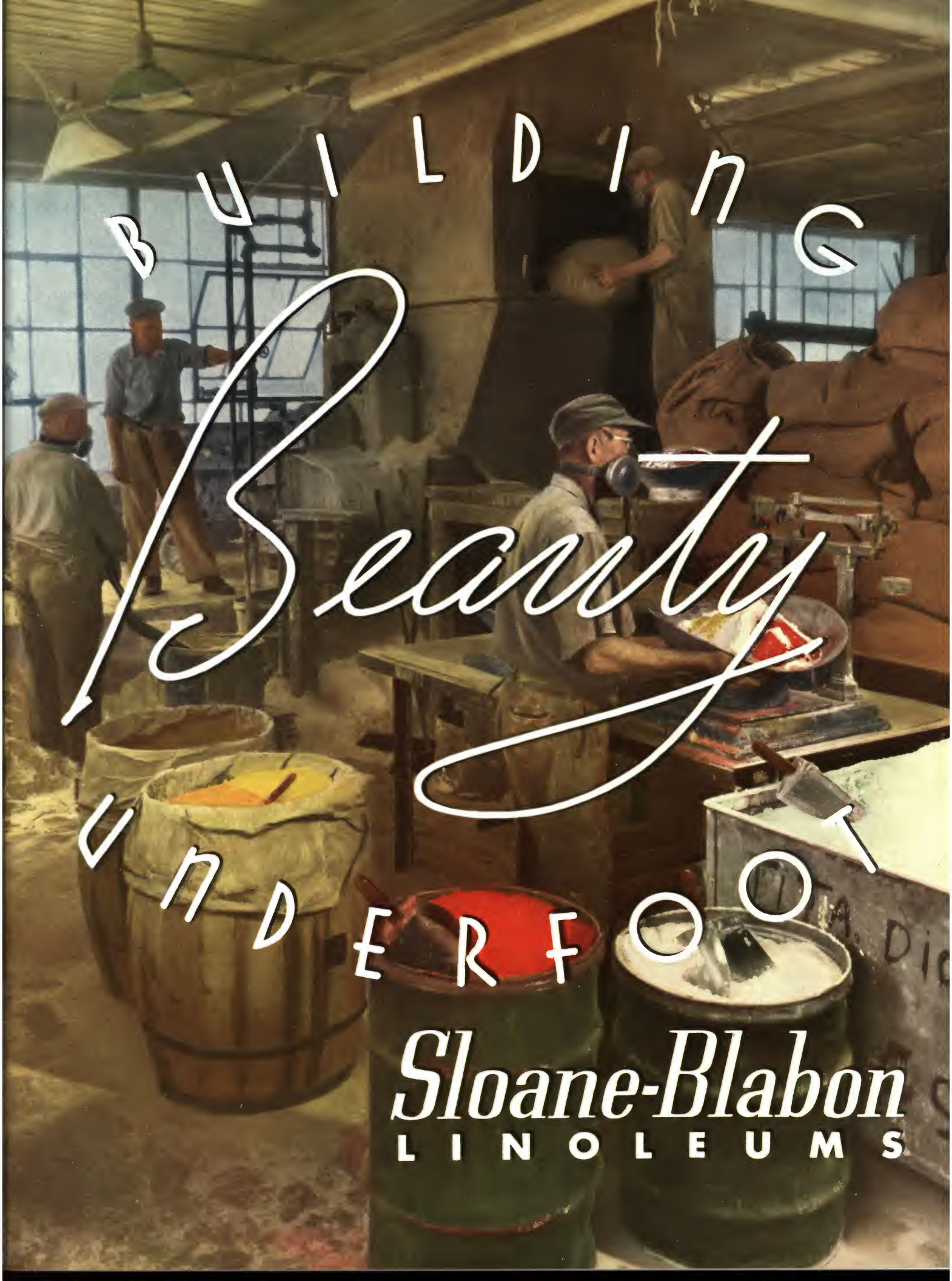
(5) MASTIPAVE APPLICATION—The Mastipave applicator shall inspect all sub-floors to receive his material and shall only proceed when their condition is such as to assure a satisfactory installation.

NOTE: *Since Mastipave is installed only by Authorized Mastipave Applicators, detailed application specifications are not included in this file. Architects, however, may obtain the names of applicators nearest them by communicating with* THE PARAFFINE COMPANIES, INC., *at any of the offices shown at the top of page 1 of this catalog.*

REPRESENTATIVE MASTIPAVE INSTALLATIONS

The Western Union Telegraph Co.*
Remington-Rand Company, St. Joseph, Mo.
General Electric Co., Cleveland, Ohio
Crane Company*
Gantner & Mattern Knitting Mills, San Francisco, Calif.
Calcoa Chemical Co., Bound Brook, New Jersey
The Coca Cola Co.*
Pacific Telephone & Telegraph Co.*
Mutual Life Insurance Co., New York City.
Coffin-Reddington Drug Co., San Francisco, Calif.
University of Louisville, Louisville, Ky.
Yakima Junior High School, Yakima, Wash.
Harvard University, Cambridge, Mass.
St. Joseph's Orphanage, Oklahoma City, Okla.
Southern Pacific Railroad Co.*
Montgomery Ward & Co.*
Holy Ghost Hospital, Cambridge, Mass.
Central Main General Hospital, Lewiston, Maine
RKO Palace, Columbus, Ohio
New York Times, New York City
Winchester Apartments, Philadelphia, Penna.
Butler Brothers, Chicago, Ill.
Sears Roebuck & Co.*
California Packing Corp., Fresno, Calif.
The Merchandise Mart, Chicago, Ill.
National Finance Co., Lima, Ohio
20th-Century Fox Film Studios, Hollywood
Park Theater, Pasadena, Calif.
The Great Atlantic & Pacific Tea Co.*
Manhattan Chess Club, New York City
T. S. Dennison & Company, Chicago, Ill.
Ohio Cloak Company, Cincinnati, Ohio
St. Johns Academy, Indianapolis, Indiana
Electrolux Corp., Old Greenwich, Conn.

*Mastipave used in many branch units


BUILDING
Beauty
UNDERFOOT
Sloane-Blabon
LINOLEUMS

Colorful cocktail lounge of the Wardman Park Hotel, Washington, D. C., where the Sloane-Blabon Linoleum Floor and appropriate inset figures chime in properly with amusing murals.

A SLOANE-BLABON floor covering

6,000 sq. yds. of Sloane-Blabon Linoleum decorate McClatchy Senior High School, Sacramento, Cal.; harmonious beauty is won with Marbletone, Battleship, Plain and Jaspé Linoleum.

Modern Buildings Need LINOLEUM

WHETHER the flooring need is for color and design, or durability, or quietness, or cleanliness, or economy, you can always find your answer in high quality Sloane-Blabon Linoleum. Modern buildings —whether they be private residences, institutions or public offices —do need linoleum. For this material meets every flooring need. As you examine the new Sloane-Blabon patterns on the following pages, you will note that there is a type of color and design available for any installation. Whether you wish a floor which will heighten the motif you have selected, or a floor which will dictate the decoration of the room, your choice is stimulated by the representative patterns on these pages.

Where your floor must resist heavy foot traffic, Sloane-Blabon Linoleum gives you lasting durability. Where the problem is one of quietness or cleanliness, or both, Sloane-Blabon Linoleum offers you a surface which is resilient and sound-absorbing and, because it is factory-waxed, permanently clean with a minimum of care.

RECOMMENDED USES

For offices, corridors, assembly rooms, hospitals, public buildings, libraries, and similar "extreme wear" floor areas.
For offices and residences, especially where special designs are desired.
For same uses as for Battleship, but where more decorative effect is wanted; also, for background for rugs.
For stores, churches, hospitals, hotels, and other areas desiring hand-laid tile effects that have swankiness and snap.
For churches, libraries, schools, and other "extreme quiet" areas.
For smart shops, stores, galleries, private offices, reception rooms, etc., and residences where floor must harmonize with general decorative plan.
Same as above.
Same as above.
For all commercial and residential installations where the design is "custom built."

Stylish clothes need stylish surroundings. So Bond Clothes, New York, start at the floor with shades of Marbletone Inlaid Linoleum. It's comfortable, restful, and non-slippery, too.

A SLOANE-BLABON floor covering

Heavy Marbletone Inlaid adorns the Moose Lodge at Oakland, Cal.; note the moose head inset in plain brown, with white eye and circles of burgundy red. A delightful installation.

TYPES, THICKNESSES AND COLORS AVAILABLE

BATTLESHIP LINOLEUM: (made to rigid specifications, U.S. Gov't): 6 m.m.—Brown only, 3/16″ (4.76 m.m.)—Brown, Green, Gray, Terra Cotta, Black, Havana Brown, Antique Mahogany; 1/8″ (3.18 m.m.)—Brown, Green, Gray, Terra Cotta, Black

PLAIN LINOLEUM: 1/8″ (3.18 m.m.)—Ocean Green, Regal Blue, Clear White, Sunshine Yellow, Flame Orange, Burgundy Red, Imperial Blue, Cavalier Red, Havana Brown, Antique Mahogany; Standard (1.91 m.m.)—Brown, Green, Gray, Black, Ocean Green, Regal Blue, Clear White, Sunshine Yellow, Flame Orange, Burgundy Red, Imperial Blue, Cavalier Red, Havana Brown, Antique Mahogany

JASPÉ LINOLEUM: 3/16″ (4.76 m.m.), 1/8″ (3.18 m.m.)—Brown, Copper Rust, Gray, Green, Ascot Blue, Sand, Sable

CUSTOMBILT LINOLEUM TILE: 3/16″ Plain, Marbleized; 1/8″ Plain, Marbleized

CORK CARPET: 1/4″ (6.35 m.m.)—Brown, Green

MARBLETONE INLAID LINOLEUM: "all-over" marbleization designs; Heavy—1/8″ (3.18 m.m.); Medium—(2.40 m.m.); Standard—(1.91 m.m.); heavy gauges best suited for contract work; lighter gauges best suited for residential work

STRAIGHTLINE AND EMBOSSED INLAID LINOLEUM: variety of designs and colors; Heavy—1/8″ (3.18 m.m.); Medium—(Straightline only), (2.40 m.m.) Standard—(1.91 m.m.)

STRAIGHTLINE INLAID LINOFLOR: variety of designs and colors; (2.00 m.m.)

FEATURE STRIP INLAID LINOLEUM BORDERS: a one-piece border with three feature strips; variety of designs and colors; Standard—(1.91 m.m.)

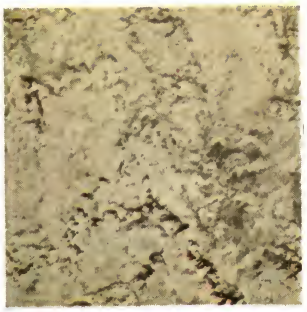
Modest Cost

Although slightly higher in initial cost than some other floor materials, linoleum has such superior wearing qualities that, over a period of years, it definitely costs less. Repairs are practically unnecessary and maintenance costs are exceedingly low.

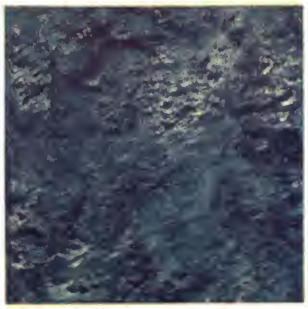
One reason why it is wise to specify "Sloane-Blabon" when you choose linoleum is that this company has been in the business of manufacturing, distributing and selling linoleum and other floor coverings for 96 years. This signifies a prestige honestly earned. And it indicates an experience which can stand the buyer in good stead. For instance, the factory-waxing, mentioned on page 2, gives Sloane-Blabon Linoleum a durable, lovely surface which becomes even more lustrous with age and which always retains its resiliency. Experience alone can offer "extras" such as this. Sloane-Blabon offers you the guarantee of that experience.

MARBLETONE INLAID LINOLEUM

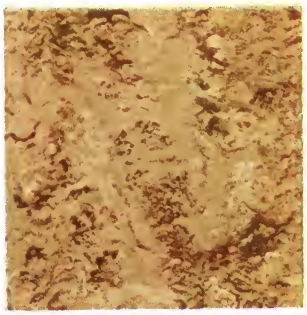
Heavy Gauge . . No. 824
Medium Gauge . No. 924
Standard Gauge . No. 418



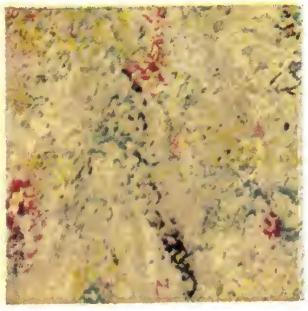
Heavy Gauge . . No. 811
Medium Gauge . No. 911
Standard Gauge . No. 391



Heavy Gauge . . No. 825
Medium Gauge . No. 925
Standard Gauge . No. 422



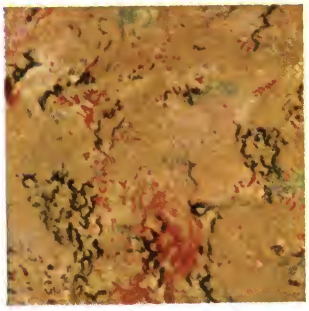
Heavy Gauge . . No. 823
Medium Gauge . No. 923
Standard Gauge . No. 420



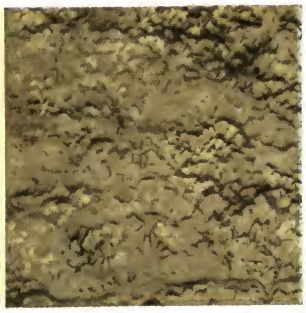
Standard Gauge . No. 380

Heavy Gauge . . No. 815
Medium Gauge . No. 915
Standard Gauge . No. 397

Heavy Gauge . . No. 817
Medium Gauge . No. 917
Standard Gauge . No. 402



Heavy Gauge . . No. 813
Medium Gauge . No. 913
Standard Gauge . No. 393

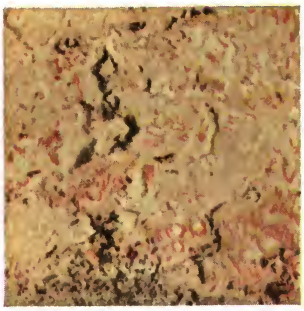


Heavy Gauge . . No. 808
Medium Gauge . No. 908

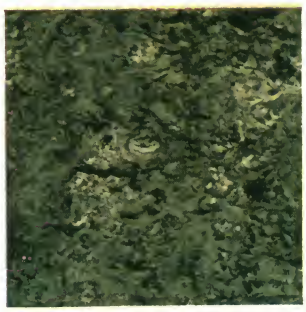
Heavy Gauge . . No. 820
Medium Gauge . No. 920

Standard Gauge . No. 382

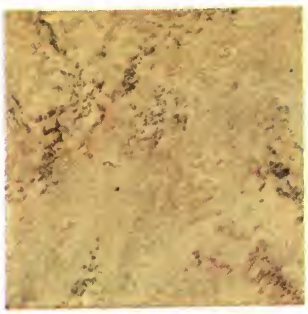
Heavy Gauge . . No. 805
Medium Gauge . No. 905



Standard Gauge . No. 383



Standard Gauge . No. 424



Linoflor . . . . . No. 584

A SLOANE-BLABON floor covering

BATTLESHIP AND PLAIN LINOLEUM

BROWN — 6MM, 3/16", 1/8" and Standard Gauges

TERRA COTTA — 3/16" and 1/8" Gauges

OCEAN GREEN — 1/8" and Standard Gauges

GRAY — 3/16", 1/8" and Standard Gauges

HAVANA BROWN — 3/16", 1/8" and Standard Gauges

FLAME ORANGE — 1/8" and Standard Gauges

CLEAR WHITE — 1/8" and Standard Gauges

GREEN — 3/16", 1/8" and Standard Gauges

CAVALIER RED — 1/8" and Standard Gauges

IMPERIAL BLUE — 1/8" and Standard Gauges

JET BLACK — 3/16", 1/8" and Standard Gauges

SUNSHINE YELLOW — 1/8" and Standard Gauges

A SLOANE-BLABON floor covering

BATTLESHIP AND PLAIN LINOLEUM (cont.)

BURGUNDY RED — 1/8" and Standard Gauges

REGAL BLUE — 1/8" and Standard Gauges

ANTIQUE MAHOGANY — 3/16", 1/8" and Standard Gauges

JASPÉ LINOLEUM

BROWN
3/16" and 1/8" Gauges

ASCOT BLUE
1/8" Gauge

GREEN
3/16" and 1/8" Gauges

SABLE
3/16" and 1/8" Gauges

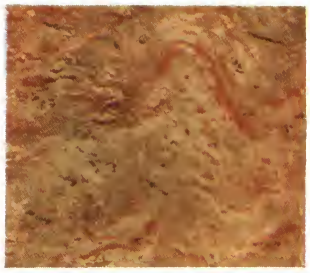
GRAY
3/16" and 1/8" Gauges

COPPER RUST
3/16" and 1/8" Gauges

SAND
3/16" and 1/8" Gauges

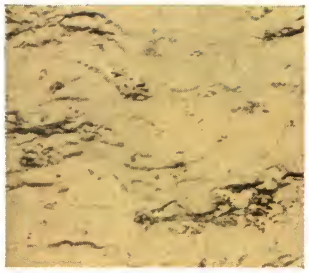
A SLOANE-BLABON floor covering

CUSTOMBILT LINOLEUM TILE

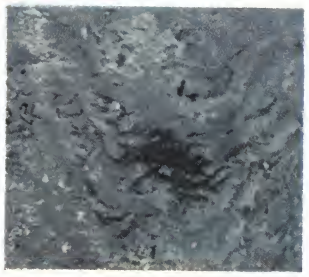


BLEACHED MAHOGANY No. 260
3/16" and 1/8" Gauges

FOREST GREEN No. 266
3/16" and 1/8" Gauges

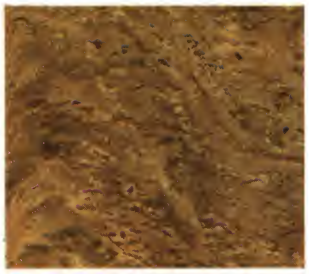


WHITE MARBLE No. 263
3/16" and 1/8" Gauges



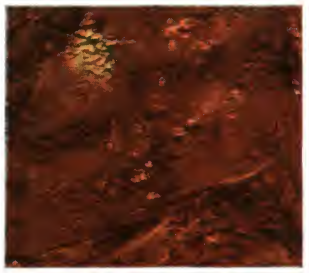
FRENCH BLUE No. 267
3/16" and 1/8" Gauges

SILVER GRAY No. 261
3/16" and 1/8" Gauges



GOLDEN OAK No. 262
3/16" and 1/8" Gauges

BLACK MARBLE No. 265
3/16" and 1/8" Gauges



INDIAN RED No. 264
3/16" and 1/8" Gauges

BEAVER BROWN No. 268
3/16" and 1/8" Gauges

LIGHT BLUE No. 207
3/16" and 1/8" Gauges

BROWN No. 202
3/16" and 1/8" Gauges

WHITE No. 203
3/16" and 1/8" Gauges

BLACK No. 205
3/16" and 1/8" Gauges

RED No. 204
3/16" and 1/8" Gauges

GREEN No. 206
3/16" and 1/8" Gauges

TAN No. 200
3/16" and 1/8" Gauges

DARK BLUE No. 208
3/16" and 1/8" Gauges

GRAY No. 201
3/16" and 1/8" Gauges

A SLOANE-BLABON floor covering

Rich tans, browns and reds of Sloane-Blabon Embossed Inlaid Linoleum harmonize with tan cowhide walls, chromium binding, the mirrored fireplace and the colorful furnishings.

A SLOANE-BLABON floor covering

White linoleum dictates the atmosphere of this lovely modern nursery and offers quietness, cleanliness and a non-slippery surface for toddling baby feet. It can be done with Sloane-Blabon.

Specifications For Suspended Concrete Subfloors

The linoleum contractor shall furnish and install the materials hereinafter specified on the floor areas as follows:

MATERIALS—Linoleum: The linoleum used to be Sloane-Blabon Waxed Finish and shall be delivered on the job in full rolls, and shall conform to Federal Specifications, applicable to each grade. Every roll must be marked with the maker's name and the grade of the linoleum. This material shall be subjected to a temperature of 70° F. for at least twenty-four hours before installation.

ADHESIVE—The adhesive shall be linoleum paste as manufactured by Sloane-Blabon or its approved equal.

SUBFLOOR CONDITION—The concrete subfloor shall be furnished to the linoleum contractor broom clean and satisfactorily dry. The surface shall be smooth, even troweled cement finish. Where expansion joints are present, the joints shall be filled in by the linoleum contractor with plaster of paris or other suitable material so that no marks will show through the surface of the linoleum. Installation should not proceed until an adequate test is made to assure that the floors are free from moisture or a written release obtained from the owner or contractor.

APPLICATION OF MATERIALS—On the subfloor thus prepared the linoleum shall be cut to fit the room accurately and neatly and shall be laid so as to have a minimum of seams. At junctions with vertical surfaces linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for from 1/2 to 3/4-in. lap at all seams for double cutting where Battleship, Plains, Jaspes and all-over marble patterns are used. (See note for pattern goods). The entire body of the linoleum shall then be secured to the concrete subfloor using Sloane-Blabon Linoleum Paste, and shall immediately be rolled from the center out, with a linoleum roller, weighing 150 lbs., to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight, even workmanlike seam.

All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately 6 in. of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least an hour to permit any shrinkage, likely to occur. Paste should then be applied under the lapped linoleum and cut, using a straightedge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

NOTE: Specifications for Cutting Seams. Where Pattern Goods are to be Installed.

Method A. The seams shall be only slightly lapped (not more than 3/16 in.). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure tight and sightly seams.

Method B. (Alternate.) The sheets of linoleum shall be butted together in continuous contact between succeeding sheets and shall be secured by the removal of all high points along the butt edges of the linoleum with a block plane or other tool.

Either one of these two methods is necessary for the application of pattern goods in order that distortion of the pattern does not occur when the job is completed.

CLEANING OF LINOLEUM—The linoleum contractors shall remove all paste spots with a damp cloth, leaving the floor broom clean and in good condition.

PROTECTION—After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done, as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER—Without cost to the linoleum contractor, the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done; he shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary electrical power to clean and polish the floor.

GUARANTEE—The linoleum contractor shall guarantee the floor against all defects in material and workmanship for one year from date of completion of the job.

Here you witness how a large inset circle within the field of a Sloane-Blabon Floor gives added size to a small bar; a good hint for hotels that want to take advantage of limited space.

A SLOANE-BLABON floor covering

In Good Housekeeping Institute's "House of the Month" you are introduced into an immaculate kitchen with Sloane-Blabon Marbletone Linoleum Floor and Havana Brown feature strip.

Specifications For Suspended Wood Subfloors

The linoleum contractor shall furnish and install the materials hereinafter specified on all wood subfloor areas as follows:

MATERIALS—Linoleum: The linoleum used to be Sloane-Blabon Waxed Finish and shall be delivered on the job in full rolls, and shall conform to Federal Specifications, applicable to each grade. Every roll must be marked with the maker's name and grade of the linoleum. This material shall be subjected to a continuous temperature of 70° F. for at least 24 hours before installation.

LINING FELT—The felt shall be either unsaturated lining felt, or asphalt saturated lining felt. The unsaturated lining felt shall weigh approximately 1 lb. per sq. yd. The saturated felt shall have a minimum weight of approximately 1½ lbs. per sq. yd. Both saturated and unsaturated lining felt should be of a make as recommended by the manufacturer of the linoleum used.

ADHESIVE—The adhesive for adhering the lining felt to the wood floor as well as the linoleum to the lining felt shall be linoleum paste as manufactured by Sloane-Blabon or its approved equal.

SUBFLOOR CONDITION—The suspended wood base (if new) shall be furnished and installed by another contractor. This wood base shall be brought up to a surface..... ...below the finished floor level, and shall consist of thoroughly dry and well seasoned tongue and grooved lumber not more than 4 in. wide, preferably laid diagonally and toe nailed with about 1/32-in. joints close but not driven tight.

On old suspended wood subfloors the loose, defective or badly worn boards shall be replaced and securely nailed. Any unevenness in the boards shall be planed or sanded, smooth and even and cracks filled. This work shall be done by another contractor.

APPLICATION OF MATERIALS—On the wood subbase thus prepared there shall be installed 1 lb. unsaturated felt or 1½ lb. saturated felt, which shall be securely adhered to the base with Sloane-Blabon Linoleum Paste. It is preferable to lay the lining felt so that the length of the material will run across the boards. The felt is to be laid with carefully butted joints—all cross joints to be staggered. The felt shall be carefully cut to fit all vertical surfaces and shall be applied to the floor with Sloane-Blabon Linoleum Paste. The felt shall be thoroughly rolled into the adhesive with a linoleum roller weighing 150 lbs.

Over the felt lining thus completed apply Sloane-Blabon Linoleum which shall be cut to cover the area with the fewest possible seams. In those cases where it is economical to lay the lengths of the linoleum parallel with the lengths of the felt, care should be taken to avoid having the seams of the linoleum fall directly over the seams of the felt.

At junctions with vertical surfaces the linoleum shall be carefully scribed so as to form a tight joint at these points. Allowance shall be made for 1/2 to 3/4-in. lap at seams for double cutting where Battleship, Plains, Jaspes and all-over marble patterns are used (see note for pattern goods).

The entire body of the linoleum shall then be secured to the felt, using Sloane-Blabon Linoleum Paste and shall immediately be rolled from the center out with the linoleum roller to assure complete adhesion and to remove all air bubbles.

After the body of the linoleum has thus been adhered to the subfloor with the seams properly lapped, the seams shall be cut through the two thicknesses. The edges of the linoleum shall then be embedded into the adhesive and thoroughly rolled to assure a tight, even workmanlike seam. All seams and edges shall be thoroughly weighted down with sand bags to secure proper adhesion.

Where cross seams in linoleum are necessary, the linoleum should be lapped after pasting to within approximately 6 in. of where the seam is to be made. After the pasted area has been thoroughly rolled, the linoleum should be left in this lapped condition for at least an hour to permit any shrinkage, likely to occur. Paste should then be applied under the lapped linoleum and cut, using a straightedge, through both thicknesses. In pasting and removing the excess linoleum, any tendency toward excessive bending of the linoleum should be avoided.

NOTE: Specifications for Cutting Seams. Where Pattern Goods are to be Installed.

Method A. The seams shall be only slightly lapped (not more than 3/16 in.). The edge of the upper sheet shall be used as a guide for cutting the lower sheet in order to secure a tight and sightly seam.

Method B. (Alternate.) The sheets of linoleum shall be butted together in continuous contact between succeeding sheets and shall

(continued on next page)

(continued from preceding page)

be secured by the removal of all high points along the butt edges of the linoleum with a block plane or other tool.

Either one of these two methods is necessary for the application of pattern goods in order that distortion of the pattern does not occur when the job is completed.

CLEANING OF LINOLEUM—The linoleum contractor shall remove all paste spots with a damp cloth, leaving the floor broom clean and in good condition.

PROTECTION—After the linoleum floors have been inspected and approved, the general contractor shall cover the linoleum with heavy paper in rooms where painting or other work is to be done, as a protection until the building is ready for occupancy.

LIGHTING, HEATING, HOISTING AND POWER—Without cost to the linoleum contractor, the owner or general contractor shall maintain a temperature of at least 70° F. during the time the linoleum work is being done; he shall light the rooms sufficiently for efficient work; he shall furnish hoisting service; he shall furnish the necessary power to clean and polish the floor.

GUARANTEE—The linoleum contractor shall guarantee the floor against all defects in material and workmanship for one year from date of the completion of the job.

In addition Sloane-Blabon Linoleums have always been guaranteed to be made of the best raw materials and of a quality and finish to meet the highest standards. Through authorized contractors, selected for the quality and excellence of their installations, we are now prepared to guarantee the owner of a Sloane-Blabon Linoleum floor that not only is the material of highest quality (in excess of United States Government requirements) but that it has been properly installed in accordance with Sloane-Blabon Specifications and in a workmanlike manner.

The term of the Guarantee varies according to the thickness of the linoleum used.

Only perfect merchandise carries this consumer protection. Backed by Sloane-Blabon Corporation and W. & J. Sloane Selling Agents, Inc., these Finished Floor Service Guarantees represent thorough protection to the consumer.

• • •

SPECIFICATIONS FOR LINOLEUM TILE

For Wood and Concrete Subfloors

All tile shall be of good durable quality, thoroughly seasoned and accurately cut. The lines between the tiles shall be straight so as to preserve the symmetry of the design. All borders shall follow the line of permanent fixtures. The width of borders may vary to allow for variations in the dimensions of the rooms, size of tile, and designs selected. The tile or border shall butt against the base and plinth blocks, which shall be carried down to the floor level. The surface of the finished tile floor shall be cleaned and buffed and the floor shall be left smooth and in good condition.

ESSENTIAL POINTS TO WATCH WHEN LINOLEUM IS BEING LAID

These are important points for an architect to bear in mind in preparing specifications. For convenience, therefore, they are given separately from the detailed specifications which follow:

(1) STORING OF LINOLEUM ON THE JOB—Linoleum should be stored in a dry place in an upright position, in a temperature of at least 70 degrees for 24 hours previous to using.

(2) UNPACKING LINOLEUM—Light, heat and power sufficient for efficient work shall be furnished by the general contractor, so that the linoleum contractor can do his work properly and without cost to the latter. In unpacking linoleum it is essential that it be done in a temperature of at least 70 degrees.

(3) FLOOR CONDITION—It is most essential that the floors be absolutely dry, clean and level to insure proper installation of linoleum. The presence of moisture, oil, paint, etc., will prevent proper adhesion of linoleum to underfloor.

(4) INSTALLING LINOLEUM—A. On concrete subfloors linoleum is installed direct to concrete underfloor using linoleum paste throughout as the adhesive.

B. On wood subfloors an interliner of felt weighing 1 lb. per sq. yd. is first installed on wood floors. In both installation of felt and linoleum, the adhesive is linoleum paste.

C. Floors on Grade—Unless floors are thoroughly dampproof and absolutely dry, linoleum should not be installed on floors in contact with earth on or below grade.

(5) ADHESIVES—Linoleum paste is used throughout for all installations, whether direct to concrete or with felt interliner on wood floors.

On floors of marble, terrazzo, steel, etc., a linoleum cement adhesive is used.

(6) WORKMANSHIP—The linoleum contractor shall furnish competent labor thoroughly trained in the laying of linoleum.

TABLE OF WIDTHS, GAUGES AND WEIGHTS

Grades	Width	Approx. thickness	Gauge	Approx. sq. yds. per roll	Approx. wt. per sq. ft.
Battleship Linoleum—Waxed Finish					
6 m.m.—U.S.N. Standard	6 ft.	15/64-in.	6.00 m.m.	60	1.45
3/16-in.—U.S.N. Standard	6 ft.	3/16-in.	4.76 m.m.	60	1.17
1/8-in.—U.S.N. Standard	6 ft.	1/8-in.	3.18 m.m.	60	0.80
Plain Linoleum—Waxed Finish					
Standard	6 ft.	5/64-in.	1.91 m.m.	60	0.53
Jaspé Linoleum—Waxed Finish					
3/16-in	6 ft.	3/16-in.	4.76 m.m.	60	1.17
1/8-in	6 ft.	1/8-in.	3.18 m.m.	60	0.80
Cork Carpet					
1/4-in	6 ft.	1/4-in.	6.35 m.m.	60	0.95
Custombilt Linoleum Tile					
3/16-in		3/16-in.	4.76 m.m.		1.25
1/8-in		1/8-in.	3.18 m.m.		1.00
Marbletone Inlaid Linoleum—Waxed Finish					
Heavy 1/8-in	6 ft.	1/8-in.	3.18 m.m.	60	0.92
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.72
Standard	6 ft.	5/64-in.	1.91 m.m.	60	0.56
Straightline Inlaid Linoleum—Waxed Finish					
Heavy 1/8-in	6 ft.	1/8-in.	3.18 m.m.	60	0.92
Medium	6 ft.	3/32-in.	2.40 m.m.	60	0.72
Standard	6 ft.	5/64-in.	1.91 m.m.	60	0.56
Linoflor—Waxed Finish	6 ft.	5/64-in.	2.00 m.m.	60	0.50
Straightline Inlaid Linoflor	9 ft.			90	

A SLOANE-BLABON floor covering

BRIEF SPECIFICATIONS

Where brief specifications are desired the following will meet requirements:

Furnish and install Sloane-Blabon Wax Finish Linoleum as listed below.

Designate gauge and color, or pattern as the case may be, and the areas to be covered.

Linoleum to be installed in accordance with Sloane-Blabon standard specifications, shown in SWEET'S CATALOG.

MAINTENANCE SPECIFICATIONS

Linoleum protected by the famous Sloane-Blabon Waxed Finish is practically impervious to dirt, stains, etc. The wax thoroughly fills the pores of the composition, sealing the surface, and at the same time acts as a preservative for the linoleum.

The most economical and practical method of maintaining these floors is by simple brushing or dry mopping, supplemented by an occasional application of a standard brand of floor wax. A thin film of wax should be allowed to dry for 20 to 30 minutes.

Under normal conditions it will be seldom necessary to scrub linoleum with soap and water. At such times, a mild household soap is recommended as strong soaps and cleansing agents will ruin a linoleum floor. Too much wash water should be avoided as it may eventually damage the linoleum.

Too much weight concentrated on a given spot may mar the appearance or damage the face of your Sloane-Blabon Floor. Equip all desks, chairs, tables, etc., with sliding casters having a bearing surface of at least 1½ to 2 in. in diameter. Any hardware store can furnish you with these casters and with glass or bakelite furniture rests.

ARCHITECTS' SERVICE DEPARTMENT

It has been the privilege of SLOANE-BLABON CORPORATION as floor covering manufacturers to cooperate with architects and contractors in solving their floor covering problems for many years. Architects and contractors are invited to use this service freely. It is rendered without cost or obligation. May we suggest that you address your inquiries to: SLOANE-BLABON CORPORATION, 295 Fifth Avenue, New York, N. Y., or any of the branch offices listed on the last page. We will be delighted to be of service to you.

PARTIAL LIST OF RECENT SLOANE-BLABON LINOLEUM INSTALLATIONS

CALIFORNIA

Los Angeles Post Office Bldg.	40,000 yds.
Los Angeles Board of Education	28,000 yds.
Hollenbeck School, Los Angeles	10,000 yds.
So. Calif. Tel. Co., Los Angeles	6,000 yds.
American Bank Bldg., Los Angeles	4,000 yds.
Dept. of Public Works, Sacramento	9,000 yds.
McClatchy Sr. H. S., Sacramento	6,000 yds.
Sacramento Jr. College	4,500 yds.
City & County of San Francisco (Schools & Fire Stations)	10,000 yds.
Los Angeles City Hall	32,000 yds.
Los Angeles County Hospital	82,000 yds.
Univ. of Cal., Los Angeles	22,000 yds.
Palo Alto Hospital	5,000 yds.

CONNECTICUT

Norwich State Hospital	2,000 yds.
Yale University, New Haven	18,000 yds.

COLORADO

Railway Exch. Bldg., Denver	3,500 yds.
Ferguson Bldg., Denver	4,000 yds.

DELAWARE

DuPont Bldg., Wilmington	2,400 yds.

DISTRICT OF COLUMBIA

New Dept. of Interior Bldg.	52,500 yds.
Wardman Park Properties	6,000 yds.

ILLINOIS

Chicago Bd. of Education	5,000 yds.
City Hall & County Bldg., Chicago	2,500 yds.
Commonwealth Edison Bldg., Chicago	1,100 yds.
U. S. Post Office, Chicago	800 yds.
Bankers Bldg., Chicago	3,300 yds.
Klee Bros. Clothing Co., Chicago	1,400 yds.
Underwood, Elliott, Fisher Co., Chicago	1,400 yds.
Electro Motive Corp., McCook	1,500 yds.
U. S. Post Office, Chicago	6,000 yds.
Ill. Bell Tel. Co., Chicago	15,000 yds.
Merchandise Mart, Chicago	20,000 yds.
Chicago Bd. of Education	4,500 yds.
Grad. Bldg., Univ. of Chicago	2,000 yds.
Northwestern Univ., Evanston	3,100 yds.

INDIANA

Ind. Bell Tel. Co., Indianapolis	1,800 yds.
Occidental Bldg., Indianapolis	1,200 yds.
Veterans Adminis., Marion	1,586 yds.

LOUISIANA

Charity Hospital, New Orleans	32,000 yds.
Nurses Home, New Orleans	5,000 yds.

MARYLAND

Nat'l Health Institute, Bethesda	4,900 yds.
Marine Hospital, Baltimore	5,500 yds.

MASSACHUSETTS

Park Sq. Bldg., Boston	43,000 yds.
First Nat'l Bank, Boston	22,500 yds.
Mass. State Office Bldg., Boston	16,000 yds.
Mass. Mutual Life Ins. Co., Springfield	26,000 yds.

MICHIGAN

Mich. State College, E. Lansing	5,100 yds.
Mt. Morris H. S., Mt. Morris	1,200 yds.

MINNESOTA

Sumner Project, PWA, Minneapolis	6,800 yds.

MISSOURI

City Hall, Kansas City	16,000 yds.
Jackson County Court House, K. C.	12,000 yds.
Southwest'n Bell Tel. Co., St. Louis	9,000 yds.

NEBRASKA

Municipal Univ. of Omaha, Omaha	7,500 yds.
Nebraska State Capitol, Lincoln	10,000 yds.

NEW JERSEY

Stanley Holmes Housing Village, Atlantic City	2,900 yds.
Linden Housing Project	3,000 yds.
Passaic County Court House	15,000 yds.

NEW YORK

Larchmont Garden Apts., Mamaroneck	4,000 yds.
Irving Trust Co., New York	5,000 yds.
Loft Inc., New York	2,500 yds.
Westinghouse Elec. & Mfg. Co., N. Y.	5,000 yds.
Equitable Office Bldg. Corp., N. Y.	10,000 yds.
P. O. Grand Central Depot	8,000 yds.
Bd. of Foreign Missions, New York	2,300 yds.
General Post Office, New York	12,500 yds.
Harlem Housing Project, New York	6,000 yds.
Williamsburg Housing Project	20,000 yds.
U. S. Military Academy, West Point	1,400 yds.
U. S. Post Office, Albany	6,225 yds.
City Hall, Buffalo	40,000 yds.
Pilgrim State Hospital, Brentwood	45,000 yds.
American Smelting & Refining Co., New York	2,000 yds.
Bond and Mortgage Co., New York	4,500 yds.
Chase Nat'l Bank, New York	2,400 yds.
Consolidated Gas Co., New York	100,000 yds.
Hotel Waldorf-Astoria, New York	12,000 yds.
Metropolitan Life Ins. Co., N. Y.	22,000 yds.
N. Y. C. Dept. of Health Bldg., N. Y.	16,000 yds.
R. K. O. Offices, New York	3,650 yds.
Port of N. Y. Authority Bldg., N. Y.	6,000 yds.
Presbyterian Hospital, New York	60,000 yds.
Socony-Vacuum Bldg., New York	10,000 yds.
Western Union Bldg., New York	19,000 yds.

OHIO

Ohio Bell Tel. Co., Cleveland	1,300 yds.
Welfare Federations Bldg., Cleveland	5,000 yds.

OREGON

Klamath Falls High School	1,500 yds.
Pacific Tel. Bldg., Portland	7,000 yds.

PENNSYLVANIA

Bryn Mawr Col. Dormitory Bldg.	1,138 yds.
Pa. State Sanitarium, Hamburg	4,100 yds.
Finance Bldg., Harrisburg	18,600 yds.
Senior H. S., Philadelphia	2,450 yds.
Vocational Training School, Phila.	3,790 yds.
Hill Creek Housing Project, Phila.	4,600 yds.
Frankford Hospital, Philadelphia	1,241 yds.
Western State Psychiatric Hospital, Pittsburgh	10,160 yds.
U. S. Post Office, Philadelphia	4,000 yds.
Ben Franklin Hospital, Phila.	14,000 yds.
Women's Hospital, Philadelphia	4,500 yds.
Koppers Bldg., Pittsburgh	20,000 yds.

RHODE ISLAND

Hope St. Sr. H. S., Providence	9,200 yds.
Mt. Pleasant Sr. H. S., Providence	8,600 yds.
Windmill St. School, Providence	5,800 yds.

TENNESSEE

Third Nat'l Bank, Nashville	4,000 yds.

TEXAS

Southwestern Bell Tel. Co., Dallas	2,933 yds.
Federal Office Bldg., Houston	5,000 yds.

VIRGINIA

Univ. of Virginia Library, Charlottesville	4,500 yds.

WASHINGTON

Buckley Custodian School, Buckley	2,500 yds.
Lincoln Ele. School, Mt. Vernon	2,250 yds.
Omak High School	1,000 yds.

WISCONSIN

Northwestern Life Ins. Co., Milwaukee	17,300 yds.

U. S. NAVY

Aircraft Carrier Yorktown	10,500 yds.
Aircraft Carrier Enterprise	10,500 yds.
Aircraft Carrier No. 4 Ranger	10,500 yds.
Cruiser Phoenix, Cruiser Savannah, Cruiser Nashville	12,000 yds.
Cruiser Boise	3,500 yds.
Cruiser St. Louis	3,500 yds.
Cruiser Tuscaloosa	5,000 yds.

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ALABAMA
Birmingham
Birmingham Woodenware Co.

ARIZONA
Phaenix
Albert Mathias & Co.

CALIFORNIA
Los Angeles
Century Floor Caverings
Karl Sapper & Sons
San Francisca
Califarnia Shade Cloth Ca.
Sloane-Blabon Warehause

COLORADO
Denver
Marey Mercantile Co.
Grand Junction
Salt Lake Hardware Co.
Puebla
Morey Mercantile Co.

CONNECTICUT
Hartford
New England Floor Cov. Co., Inc.
New Haven
New England Floor Cov. Co., Inc.

FLORIDA
Jacksanville
Peaslee-Gaulbert Corp.
Miami
Peaslee-Gaulbert Carp.

GEORGIA
Atlanta
Cowan-Boze Ca., Inc.
King Hardware Ca.
Gainesville
Hasch Bras. Ca.

IDAHO
Baise
Salt Lake Hardware Ca.
Pocatello
Salt Lake Hardware Co.

ILLINOIS
Chicaga
American Shade Clath Ca.
Strauss-Rase Carpet Carp.
Western Flaor Coverings, Inc.
Slaane-Blaban Warehause

INDIANA
Indianapolis
Kiefer-Stewart Co.
Terre Haute
Levin Brathers

IOWA
Des Maines
Negbaur & Sans
Siaux City
C. T. Happer Furniture Co.

KANSAS
Atchison
Blish, Mize & Silliman Hardware Ca.
Wichita
Negbaur & Sans

KENTUCKY
Buffalo
E. S. Ferrill & San
Hendersan
Lambert-Grisham Hardware Ca.

KENTUCKY—Continued
Lauisville
The Irvin Kahn Co.
Paducah
M. Livingstan & Ca.
Paintsville
Big Sandy Hardware Co.

LOUISIANA
New Orleans
Jaubert Brathers, Inc.

MAINE
Partland
Sawyer Barker Co.

MARYLAND
Baltimare
Arman & Co.
Strauss Brathers, Inc.
Eastan
Eastan Whalesale Gracery Co.
Hagerstown
J. W. Myers & Ca., Inc.

MASSACHUSETTS
Boston
Abrams Bras.
Jahn H. Pray & Sans
Prescatt & Co.,

MICHIGAN
Detrait
Buhl Sons Co.
Edson, Moore & Co.
Grand Rapids
Buhl Sons Ca.
C. J. Farley & Co.

MINNESOTA
Minneapalis
Janney, Semple, Hill & Co.
Nathan Pliam Whalesale Ca.

MISSISSIPPI
Greenville
Henderson & Baird Hardware Co.
Greenwaad
Henderson & Baird Hardware Ca.

MISSOURI
Kansas City
Negbaur & Sons
St. Lauis
Midwest Linaleum & Rug Co.

MONTANA
Great Falls
Great Falls Paper Co.

NEBRASKA
Omaha
Mackin Sales Co.
Paxton & Gallagher Co.

NEW JERSEY
Trenton
United Tire Stares Ca. (Fineburg's)

NEW MEXICO
Albuquerque
J. Karber & Co.

NEW YORK
Buffala
Joseph J. Weber

NEW YORK—Continued
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Progressive Rug & Linaleum Co.
Stitt & Howell, Inc.
Trorlicht-Duncker Carpet Ca.
Plattsburgh
A. H. Marshall Co., Inc.
Rochester
Alling-Cary Company
Schenectady
Empire Floor Cavering Ca.
Utica
Utica Plumbing Supply Ca.

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Charlatte
Williams & Sheltan Co.
High Point
Williams & Shelton Co.
Magnolia
J. A. Smith & Ca.

NORTH DAKOTA
Fargo
Smith Fallett & Crowl Co.

OHIO
Cincinnati
J. H. Hibben D. G. Co.
Schuster Electric Co.
Cleveland
The Rabert Levin Carpet Co.
Jaseph J. Weber
Columbus
Tracy Wells Co.
Toleda
Buhl Sans Co.

OKLAHOMA
Oklahama City
Negbaur & Sons

OREGON
Partland
Northwest Floor Coverings, Inc.

PENNSYLVANIA
Allentawn
Arman & Ca.
Altoona
Blair Floor Products Co.
(Samuel Beerman)
Danville
W. W. Welliver Hardware Co.
Erie
Jaseph J. Weber
Harrisburg
Armon & Co.
Johnstown
Jahnstown Dry Goods Co.
Philadelphia
Armon & Co.
S. Kramer & Co.
Savage & Kirsh
Tinkler & Campany
Pittsburgh
Balter Paper Co.
Wilkes-Barre
Arman & Co.
c/a Wilkes-Barre Storage Co.
Yark
York Paint & Hardware Co.

RHODE ISLAND
Providence
B. Alfred Fain

SOUTH CAROLINA
Columbia
Williams & Shelton Co.
Spartansburg
Cooper Furniture Co.

TENNESSEE
Chattanaaga
Archer Paper Co.
Knaxville
Sterchi Brothers Stares, Inc.
Nashville
Renard Linaleum & Rug Co.

TEXAS
Beaumant
Tyrrell Hardware Ca.
Corpus Christi
Straus-Frank Co.
Dallas
Radia City Distributing Co.
El Pasa
Albert Mathias & Campany
Fart Worth
Fakes & Co.
Hauston
Readers Wholesale Distributors
Lubback
Wm. Cameron & Ca., Inc., Wholesale
San Antanio
Straus-Frank Ca.
Texarkana
Wm. Cameron & Ca., Inc., Wholesale

UTAH
Salt Lake City
Salt Lake Hardware Co.

VIRGINIA
Norfalk
J. J. Haines & Co.
Richmand
J. J. Haines & Co.
Roanake
Williams & Shelton Co.

WASHINGTON
Seattle
Northwest Floar Caverings, Inc.
Spakane
Narthwest Floar Caverings, Inc.

WEST VIRGINIA
Beckley
Raleigh Hardware Ca.
Charleston
Eskew, Smith & Cannon
Parkersburg
H. P. Dils & Son Ca.
Wheeling
John S. Naylor Co.

WISCONSIN
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Wisco Hardware Co.
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DALLAS
Melba Theatre Bldg.

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1700 Washington Avenue

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1355 Market Street

SEATTLE
2030 Westlake Avenue

SECTION 11

CONTINUED ⟶

FREDERIC BLANK & COMPANY, INC.

New York Central Building, 230 Park Avenue, NEW YORK

Won't Fade **Salubra** *Will Wash*

REG. U. S. PAT. OFF.

Wall Covering
"Oil Paint by the Roll"

Salubra — Architecturally Significant

Salubra is a permanent wall finish which at once completes the structure and decorates the wall. The architect who specifies Salubra finishes his building *structurally*, decoratively and permanently.

The manufacturing of Salubra was not an accident. A definite objective was sought which would eliminate the disadvantages of paint and other wall treatments and produce a finish to dress the wall structurally, and to provide decoration in a permanent form architecturally correct. It was a purely mathematical problem laid down for scientists to achieve by addition and subtraction.

Unmatchable Physical Properties

Briefly, Salubra is the equivalent in protective surface to six coats of oil paint on a zinc base, impregnated in parchment. Thus, it is oil paint in roll form and is applied like ordinary wall paper. The raw materials and secret formulae for its colors are revolutionary to such a degree that in fifty years no satisfactory copy of it has neared achievement. Salubra is non-porous and waterproof.

Scrubbing with soap and water cleans Salubra

Why Salubra is Structural

Salubra is structural because the parchment background affords permanent protection to the wall surface. Once applied, it becomes a part of the wall, does not come off, can be removed only by cutting its surface as with paint. It seals the pores of the plaster or other surfaces to which it may be applied and in one operation completes and decorates the structure of the wall by giving texture, color or design, as desired, lending individuality to the composition while allowing the interior to retain its architectural and structural significance. It prevents the unsightly appearance of fire cracks. Unaffected by climatic conditions, heat and cold, Salubra neither peels, nor scales. It can be perfectly butted and shows no seams. Its composition and texture are uniform because produced by laboratory methods. Thus, it enables the architect to know his specification is mathematically correct beforehand—something he cannot control in painted surfaces dependent on a human element.

Outstanding Practical Advantages

Salubra is resistant to dust, soot and odors; and, since Salubra is non-porous, it can be affected only by surface dirt and stains. These *can* and *should* be scrubbed with brush, soap and water to restore original freshness whenever necessary. Unlike "washable" wall papers, its scrubability is not obtained by a superficial application, but is inherent in the material itself. The architect and owner can thus rest assured that the wall surfaces will remain always in the same proportion to the architecture that was originally intended.

The oil colors, which have been especially compounded to resist light, guarantee true fadelessness which eliminates streaking and fading. Since fadelessness means constant maintenance of color values, a Salubra interior will maintain its freshness and beauty for years to come as originally planned. Damage can be readily repaired by invisible seamless patching. Salubra is sanitary. It cannot be eaten or undermined by vermin.

Salubra comes in roll form. It can be installed quickly and easily in a fraction of the time required for painting, without the inconvenience of obnoxious odors. It permits the use of the room the same day it is applied to the wall.

Salubra is Economical

The cost of any structural decorative treatment must be considered in relation to its durability as well as to its maintenance. The initial cost of Salubra is no higher than good paint, and is well within the average budget available for good work. Its *cost to use*, which involves the capital investment, duration of service, maintenance and repairs, taking into consideration its physical properties, stamps Salubra as the most economical wall finish. If preference should be given to materials requiring a minimum of upkeep, the architect can *conscientiously* specify Salubra. Its upkeep reduces to almost nothing. It will maintain the wall in structural and decorative originality and permanent freshness. Periodic redecoration is unnecessary and recurrent outlays for material and labor disappear.

Salubra is Decorative

Since walls form so important a part in room structure, surfaces must be regarded in relation to architecture and not as unrelated applied ornament. Texture, color and design become crucial to the extent of perfecting or robbing the beauty and individuality of architectural lines and values. Salubra offers the widest range of colors, textures and patterns available in any wall treatment. Salubra is designed by prominent artists and architects of international repute who know not only decorative composition, but architectural design as well. Desired effects are pre-determined, studied, and as an additional protection are tested before being produced. This accounts for the fact that unless a fundamental error is made in the selection, a Salubra interior impresses favorably because the lines, combination of colors and the entire composition are correct.

FEATURES AND ADVANTAGES OF SALUBRA WALL COVERING

"Plastic Paint Armor" Impresses by Its Sturdiness

The thickness of zinc paint gives it durability. It will not soil so readily as a smooth surface. Consequently the cost of upkeep is reduced to a minimum. Its texture, while dressing the wall, precludes the appearance of seams and permits invisible patching. Its strong background gives additional protection to the plaster and prevents the appearance of fire lines and fire cracks.

It is non-porous — does not absorb odor. It is verminproof —it is washable, i.e., scrubable —its fadelessness is insurance against depreciation.

Among the large assortment of plastic paint surfaces in the Salubra collection you will find the right texture to solve your individual problems.

Textures and Designs for Any Type of Decoration

Salubra offers thousands of patterns in colors and designs to harmonize with every type of decoration, Period or Modern. There are friezes and scenic murals. Salubra cannot fade under exposure to sun or artificial light. It has all the protective and sanitary advantages of paint and is hung like wall paper.

Salubra reduces upkeep costs — scrubbing with brush, soap and water removes spots and restores all the original beauty of color and design. It is unaffected by heat, cold, moisture or dryness.

Salubra saves time—completes the structure of the wall and decorates it in one operation. It enables the architect to visualize the completed scheme before application is made with no later variance.

Salubra is the logical finish to wall structure—a wall covering with proven merits.

Samples to Show Character, Variety of Texture and Quality of Oil Paints

Whether requirements call for plain or textured surfaces, period or modern treatment, the exact one can be found in the Salubra Collection which contains thousands of designs.

Salubra is Adaptable Anywhere

Salubra's practical and decorative values are adaptable to *any type of building*. Because it possesses so many structural, decorative, practical and economical advantages, and because it is available in such a multitude of interesting surfaces and patterns, Salubra is the logical finish to the wall structure for every room in the house, or in any other type of building—apartment houses, office buildings, hotels, hospitals, stores, theatres, clubs, colleges, restaurants, banks, etc., where it has been successfully used.

All Qualities Are Proven

The architect who specifies Salubra has an exact check on his cost and specification and permanently protects his client and the relative value of his finished structure. Salubra has earned an international consumers' acceptance. It is a product of proven merits. For fifty years it has been specified by leading architects to the complete satisfaction of the user. Its dependability is not based on mere promises. It has been conclusively demonstrated as witnessed by large installations in the most important structures in every field, under every condition, both here and abroad. You can convincingly justify its use to your clients.

Service to Architects

Some architectural firms have established a department to answer clients' questions about interior decoration. To architects who do not find it practical to do this but wish to extend this service to their clients, we place our showroom and all its facilities at their disposal. We invite them to submit their decorative problems, because our co-operative service is of tangible value. It will simplify their task. We furnish estimates from blueprints, we supply samples and whatever other helpful information and assistance may be needed to carry out their ideas to a creditable solution. Our recommendations are based on a wide and practical experience and are guided not only by decorative requirements, but also by practical consideration. This service is cost-free and entails no obligation whatsoever on their part.

Wherever an atmosphere of luxury and refinement is desired, Tekko is the logical choice for wall decoration.

Tekko is available in two distinct finishes or textures. Designs for authentic period interiors are made with a satin-like sheen, giving the effects of fabrics. For interiors in the modern manner, Tekko is available in an untarnishable metallic surface.

Tekko

REG. U.S. PAT. OFF.

Wall Covering

Tekko is not a substitute for expensive fabrics, but an improvement over them. It expresses their decorative ideals, yet unlike them its surface is impervious to dust, soot and odor. It is a permanent treatment, yet its initial cost is but a fraction of that of silk and other fabrics.

Tekko does not fade and can be scrubbed with brush, soap and water. It is applied to the wall in a manner similar to good wall paper.

The Tekko Collection includes thousands of designs and colors appropriate for any type of interior when the ultimate in luxury is desired.

REPRESENTATIVE INSTALLATIONS IN EVERY BUILDING FIELD

Hotels—Palmer House, Chicago, Ill.; Ritz-Carlton Hotel, Boston, Mass.; Waldorf-Astoria, N. Y.; Davenport Hotel, Spokane, Wash.

Hospitals—Columbia Presbyterian Hospital and New York Hospital, New York, N. Y.; St. Agnes Hospital, White Plains, N. Y.

Clubs—Union League and Harvard Clubs, New York, N. Y.

Universities—Yale University, New Haven, Conn.; University of Chicago, Chicago, Ill.; Northwestern University, Evanston, Ill.

Apartment Houses—Century and Majestic Apartments, New York, N. Y.

Office Buildings—New York Telephone Co. and New York Central Buildings, New York, N. Y.

Theatres—Radio City Music Hall, New York, N. Y.; RKO Theatres; Comerford Theatres.

Stores—Showrooms—Marshall Field & Co., Crane Co.

Y. M. C. A. Buildings—Lawson Y. M. C. A., Chicago, Ill.; Y. M. C. A., Akron, Ohio.

Residences—Thousands of homes throughout the country.

COLUMBUS COATED FABRICS CORPORATION

DEPARTMENT SC
COLUMBUS, OHIO

For Bontex Washable Window Shade Cloth, see File Index

WALL-TEX DECORATIVE WALL CANVAS

For Homes, Apartments, Commercial, Institutional and Public Buildings

PRESERVES WALL AND CEILING BEAUTY—PROTECTS AGAINST PLASTER CRACKS—HONESTLY WASHABLE

Wall-Tex has two important functions—it *provides* and *preserves* decorative beauty and therefore extends its usefulness to the broadest possible field of decoration. This double function of Wall-Tex has greatly increased its use among building managers and investment men as well as home owners. So much attention has been focused on Wall-Tex as a means of protection against plaster cracks that it has become an important factor in structural planning by architects.

How Wall-Tex Protects

The swatches of material on the following page show why Wall-Tex is basically different from ordinary wall coverings. Its tough canvas base gives structural strength to plaster which is constantly subjected to contraction and expansion causing cracks.

Durable Canvas Base

Plaster is brittle and non-flexing. Wall-Tex is pliable and flexible. Its reinforcing strength prevents hairline and larger cracks, and its flexibility prevents ugly settling cracks from tearing through the canvas. See the proof in the unretouched photo at right. Recommend Wall-Tex to provide decorative beauty, free from plaster cracks and expensive plaster repairs.

Prevents Ordinary Cracks Conceals Settling Cracks

How Wall-Tex Preserves Cleanliness

Wall-Tex is known to millions as the *honestly washable* wall covering. We invite you to test the swatches by washing with soap and water. Soil them with dust, soot and grease and then compare the ease of washing with other wall coverings.

Wall-Tex oil colors shed dust, dirt and water—they are not easily soiled but are quickly cleaned. They will stand many washings, making it possible to have fresh, bright wall coverings season after season without the high cost of untimely redecorating. No special methods, rules or "donts" need be observed in washing Wall-Tex—it is easy as washing enameled woodwork.

Ideal Foundation for Paint

Like other structural materials, Wall-Tex may be regarded as permanent. When a change in decoration is required, Wall-Tex should be left on walls as protection for the plaster. It is a perfect foundation for paint, paper or any other decorative finish. Paint over Wall-Tex provides a soft, beautiful finish that gives richness and character to the walls.

Wall-Tex for Ceilings

Plaster cracks usually appear in ceilings first of all. By applying Wall-Tex, ceiling cracks can be prevented and less frequent decoration of ceilings will be necessary. Beautiful ceilings in any of the modern effects can be obtained with Wall-Tex. It is furnished in plain colors in stippled and grained finishes, and either Wall-Tex Stiffened Canvas or Lining Cloth makes an excellent foundation for tinting to conform to any color scheme.

Wall-Tex for All Buildings, All Rooms

The widespread demand for a beautiful, practical wall covering to preserve beauty has led to the development of the present extensive Wall-Tex line which includes types of material and a range of patterns, colors, textures and finishes to meet every decorative requirement. For any building or room you plan, there are suitable Wall-Tex patterns to beautify and protect the wall and harmonize with the surroundings.

Three Types of Wall-Tex

The line includes stiffened canvas and lining cloth which are ideal foundations for painting—and a full range of over 200 decorated patterns; plain colors in textural effects; beautiful soft-toned patterns for living rooms, dining rooms, bedrooms, halls, nurseries, dens and sunrooms; cheery glazes for kitchens, baths and other service rooms; luxurious embossed satinesques for offices, dining rooms, ballrooms and special rooms.

Through national advertising and through years of satisfactory service, Wall-Tex has won acceptance for use in homes and apartments, commercial buildings, schools, hospitals, hotels and public buildings. Where you find Wall-Tex you find enthusiasm for its practical beauty and economical service.

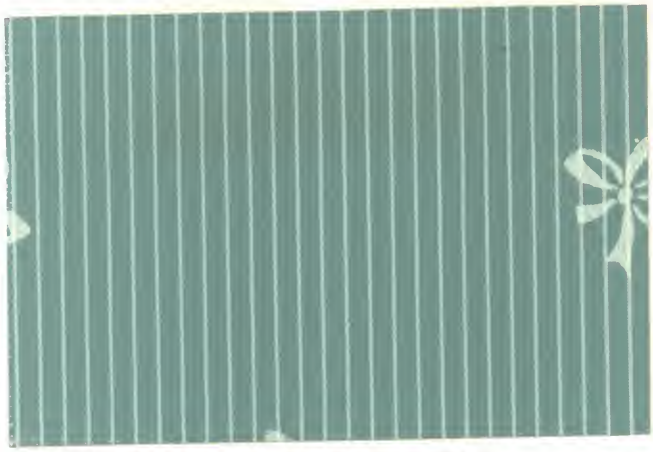
Size of Roll—How to Hang

Wall-Tex is 48 in. wide and it comes in rolls 12 yds. long—16 sq. yds. to the roll—four times as much coverage as in a roll of wallpaper.

Wall-Tex may be hung on any flat surface in much the same manner as hanging wallpaper. Any good commercial wallpaper paste may be used. Edges should be butted closely—edges are invisible when properly matched. When applying strip, the first brushing out should be from side to side rather than up and down. New walls should be sized thoroughly. Calcimined or dull-painted walls should be washed clean and then sized. Glossy painted finishes should be steel wooled or sanded or cut with an ammonia wash.

No. 3011—Grained Dull-Finish Wall-Tex in Plain Colors

Full range of newest pastel shades in textured finishes for side walls and ceilings



No. 3360—Wall-Tex Dull-Finish Pattern

Over 200 distinctive patterns—smart stripes and plaids, beautiful scenics and florals in richly textured finishes. Conservative and modernistic treatments

Rolls of Wall-Tex Needed

Table indicates the number of rolls required for common size rooms, with deductions made for openings of usual size.

Size of room, ft.	Sidewalls with ceiling height of:					Ceilings	Border needed, yds.
	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.		
8x12	2¼	2½	3	3¼	3½	¾	14
8x14	2½	2¾	3¼	3½	4	1	15
10x10	2¼	2½	3	3¼	3½	1	14
10x12	2½	2¾	3¼	3½	4	1	15
10x14	2¾	3	3½	3¾	4¼	1¼	16
10x16	3	3¼	3¾	4¼	4½	1½	18
12x12	2¾	3	3½	3¾	4¼	1¼	16
12x14	3	3¼	3¾	4¼	4½	1½	18
12x16	3¼	3½	4	4½	5	1¾	19
12x18	3½	3¾	4¼	4¾	5¼	1¾	20
14x14	3¼	3½	4	4½	5	1¾	19
14x16	3½	3¾	4¼	4¾	5¼	2	20
14x18	3½	4	4½	5	5½	2	22
16x16	3½	4	4½	5	5½	2¼	22

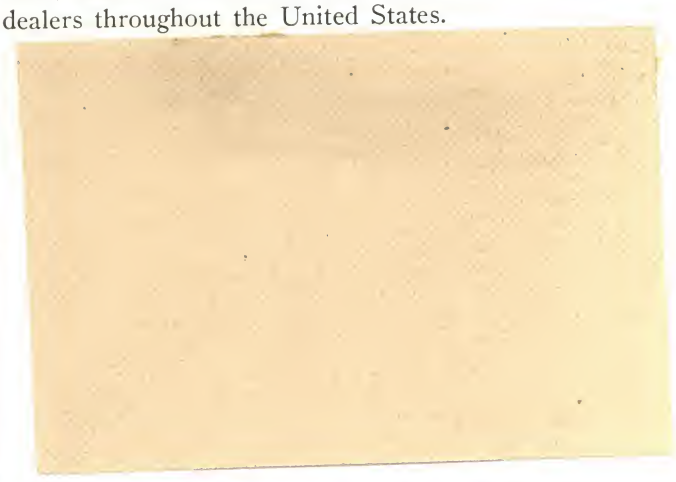
Cost of Wall-Tex

Cost of a regular dull or glazed print, like No. 3360 is 3.9¢ per sq. ft. Grained, dull-finish Wall-Tex, in plain pastel colors, like No. 3011 is 3.6¢ per sq. ft. Stiffened Canvas, No. 3097, is 3.4¢ per sq. ft. Lining Cloth is 3.3¢ per sq. ft. Hanging cost, which varies slightly in different sections, is about 2.5¢ per sq. ft. (These figures are consumer cost, at retail prices.)

Write for Special Sample Book and File Folder

Sample book, showing a selection of new and popular patterns, has been specially prepared for architects. Also a tabbed file folder which gives complete information, shows rooms in full color, and contains actual swatches of the material.

Wall-Tex canvas wall coverings are nationally advertised, known to millions and available at wallpaper dealers throughout the United States.



No. 3097—Wall-Tex Stiffened Canvas

Furnished in a range of plain colors, can be used without further redecorating—or as a foundation for tinting, painting, stippling

STANDARD COATED PRODUCTS CORPORATION

(FORMERLY STANDARD TEXTILE PRODUCTS CO.)

BUCHANAN, NEW YORK

SALES OFFICE: 527 FIFTH AVENUE, NEW YORK, N. Y.

FABRIC FOUNDATION

Sanitas

For Homes, Hotels, Apartments, Institutions, Hospitals and Public Buildings

PERMANENT • WASHABLE WALL COVERINGS

First we make it *tough* — then we make it *beautiful.* That, in a nutshell, is the basic story of this modern interior surfacing for residences, apartments, hotels, hospitals, institutions and public buildings.

A brief study of the unique multi-layer construction of SANITAS wall coverings shows how structural value is developed independently of the decorative function.

SANITAS structural strength starts with this strong cotton

cloth which has a tensile strength of 40 pounds per square inch. Each of the four protective chemical coatings (see samples) is machine-applied with precision control, and thoroughly oven-dried. The successive coatings are perfectly bonded, insuring complete cohesion with ample flexibility to withstand plaster-expansion and contraction, vibration in steel construction, etc., without cracking or tearing.

The first coating begins to build up the thickness and to establish the damp and water-proof qualities of SANITAS. The fabric weave, however, is still quite open.

With the application of the second coat, the tiny open spaces previously seen are sealed tight. The strength and durability of the original fabric has been increased.

This third coating further builds body without sacrificing pliability. Structural values of moisture-proofness and plaster-reinforcement are now fully developed.

Dirt, grease and moisture never penetrate this fourth protective coating. SANITAS strength is a dependable safeguard against the cracking of plaster.

HOW PATTERNS ARE SELECTED

SANITAS designs cannot be short-lived styles that go out of fashion quickly. They will be printed on long-lived materials.

Our Style Committee must choose patterns that are livable, good-looking — and of lasting popularity.

FRESHNESS DOES NOT FADE

The carefully chosen patterns are printed in full bodied, fade-proof and water-proof lacquers. They are printed to stay on — to last — to stand lots of soap and water washing. SANITAS is the interior finish that does not lose its "newly-decorated" look.

Copyright 1938, by Standard Coated Products Corporation

SANITAS STRENGTHENS THE WALL — PREVENTS PLASTER CRACKS

When used as the original wall finish over new construction SANITAS prevents the development of small annoying cracks caused by contraction of the plastered surface. The strong firm weave of the *fabric foundation* aids materially in holding plaster intact.

In modern steel structures—such as hotels, hospitals, tall apartment buildings—cracking is accentuated by the effect of vibration on heavily plastered "temporary" or non-bearing walls. This is especially noticeable around door frames and where a cross-girder enters a room to furnish a dropped ceiling effect.

SANITAS, as a structural reinforcement of plaster, is a splendid safeguard against the destruction of finished jobs by the cracking of plaster walls and ceilings.

FOR REMODELING JOBS

Cracks need only be cut out and the wall or ceiling pointed up to an approximate smoothness. The thickness of SANITAS tends to minimize the unevenness of a patched, cracked wall and conceals any structural defects, giving the effect of a fine smooth job.

In remodeling work, where wallboard construction or methods other than plastering are employed, SANITAS successfully conceals seams or join marks and helps simulate a more substantial construction.

SANITAS IS EASY TO KEEP CLEAN

More than 30 years ago, SANITAS, the original *washable* cloth wall covering, already possessed its sterling reputation for permanent washability. In hundreds of recorded cases, SANITAS has been maintained on the kitchen walls for periods of more than 20 years. And as a conclusive test for washability, one would be hard put to find more stringent service conditions than are found in the workshop of the home, the kitchen.

Impervious to soil and grease and thoroughly moisture-proof, a mild soap and water washing restores original freshness. SANITAS is stainproof and occasional fingerprints, spatters and smudges are instantly eradicated with a damp cloth. No special cleaners necessary.

SANITAS IS ABUSE-RESISTANT

SANITAS will not crack, tear, blister or peel. Its surface withstands most accidental bumps and scuffs which damage a less rugged material. In extreme cases where the wall itself has been harmed. SANITAS can be pulled away carefully to permit repair work and be smoothly and easily repasted.

The rugged strength of SANITAS, coupled with its complete and permanent washability, render it ideal for hotel installations. Managers say, "It's more than a match for any guest." Wherever "perishable" decoration appears hazardous, SANITAS offers the perfect solution.

SPEED OF INSTALLATION

SANITAS is more than double width material. It is 4 feet wide. A 12-yard roll covers 144 square feet. Any good paperhanger can install it, and no special paste is required. The extra width of SANITAS means a saving in time required for application with subsequent savings in labor costs. A room decorated with SANITAS can be occupied as soon as the installation is completed.

Application of SANITAS to wall surfaces has many advantages over paint. It is a one-day application compared with the usual five-day period required for applying three coats of paint. This time-saving factor is a marked advantage in apartments, hotels, institutions, and particularly speculative constructions. In addition, the use of SANITAS eliminates the usual disorder and spillage on woodwork and floors and the pungent odors of drying paint.

SANITAS — A VAPOR-BARRIER

SANITAS is completely impervious to moisture. Because of this property, it offers an effective method for inhibiting condensation. Properly installed with seams tightly butted, it provides a vapor-barrier which prevents the passage of moisture through plaster walls.

BASE FOR REDECORATION

The oil paint finish of SANITAS makes it an ideal base for subsequent finishes and eliminates the necessity for further preparation. New patterns of SANITAS, wallpaper or other forms of coverings can be applied directly to its smooth firm surface. Or paint may be brushed or sprayed over a pattern and then be stippled, blended or stencilled for decorative effect. Meanwhile, although the face of the original SANITAS has been changed by subsequent redecoration, this long-lived, practical material continues its structural guardianship and keeps walls and ceilings intact and free from annoying cracks.

SANITAS WALL LININGS

Four varieties of SANITAS Wall Linings are available. Their function is exclusively structural, as their surface is intended to be covered by some form of manually applied decoration.

Sanalining—An ideal base for calsomine, water or oil paints, or as a lining for wallpaper and photo murals. It reinforces the plaster.

Sanitas Canvas—An effective plaster reinforcement frequently covered with only one coat of paint to secure a richly-textured fabric appearance.

Sanitas Smooth Lining—A 4-coat smooth white paint finish on the fabric foundation. Intended as the base for tinting, striping, stencilling or other hand-painted decoration. An excellent base for murals.

Sanitas Prepared Canvas—Similar in use to SANITAS Canvas, designed for those who specify a heavier pyroxalin-filled base.

ROUGH PLASTER EFFECTS

As is well-known, once a wall has been worked up in the rough plaster treatment, it is almost impossible to change it unless the entire wall is replastered or the rough plaster torn out and the wall resurfaced. However, where SANITAS wall linings are used as a base, it is relatively simple, if at some future time a change is desired, to work into a corner and get hold of the lining cloth and tear down the entire rough plaster effect.

MANY INTERESTING DECORATIVE SUGGESTIONS

The 1939 SANITAS Sample Book presents the new designs in Tru-Scale proportions (3/32 in. = 1 in.). Effects are indicated on flat wall area 6 feet wide by more than 8 feet high.

Actual samples of the various colorings are shown by 7 x 11-in. cuttings of SANITAS. More than 130 styles, including both soft, rich surface textures and enameled effects are handsomely case bound in a fine stiff cover edition which will be delivered to any registered architect at his request.

INSTALLATIONS IN ALL TYPES OF BUILDINGS

Brighton, Atlantic City, N. J.
Knickerbocker, Atlantic City, N. J.
Ritz Carlton, Atlantic City, N. J.
Shelburne, Atlantic City, N. J.
St. George, Brooklyn, N. Y.
New Yorker, New York, N. Y.
Plaza, New York, N. Y.
St. Regis, New York N. Y.
Hollenden, Cleveland, Ohio
Stevens House, Lancaster, Pa.
Palmer House, Chicago, Ill.

Aetna Life Insurance Co., Hartford, Conn.
New York Life Insurance Co., Kansas City, Mo.
New York Telephone Co., Brooklyn, N. Y.
Goldman Sachs & Co., New York, N. Y.
New York Life Insurance Co., New York, N. Y.
League of Nations Bldg., Geneva Switzerland
Madison Square Garden, New York, N. Y.
Capitol, Harrisburg, Pa.

Bank of the Manhattan Co., New York, N. Y.
First National, Bethlehem, Pa.

Chester Conklin, Hollywood, Calif.
A. A. Alderton, Saginaw, Mich.
W. S. Westervelt, Glen Rock, N. J.
B. M. Duke Apt., 5th Ave., New York, N. Y.
Nils Larson, Brooklyn, N. Y.

Loew Theatre, Toronto, Ont., Can.
Earle Theatre Washington, D. C.
Metropolitan Theatre, Washington, D. C.
Tivoli Theatre, Washington, D. C.
New Palace Theatre, Chicago, Ill.
American Theatre, Chicago, Ill.

H. B. WIGGIN'S SONS CO.

Manufacturers of Cloth Wall Coverings

233 Arch Street, BLOOMFIELD, N. J.

Products

FAB-RIK-O-NA CLOTH WALL COVERINGS.
KLING-KO-NA UNDERCOATING and SIZE.
(The words Fab-Rik-O-Na and Kling-Ko-Na are registered trade-marks.)

Fab-Rik-O-Na Finished Wall Coverings

Offered in textured fabrics of plain or patterned designs, various colors and color combinations, they are well filled, evenly colored, thoroughly shrunk and prepared for pasting to the wall.

30, 34 and 36-in. rolls contain 50 yds., wider widths, 30 yds.

Fab-Rik-O-Na Prepared Wall Coverings (To Be Painted)

These fabrics are manufactured in a variety of widths, weights and textures with surfaces carefully prepared to receive paint after having been hung. They are fully shrunk, and well backed, ready for pasting to the wall in the same manner as wall paper.

The heavier fabrics are especially suitable for wainscoting in schools, salesrooms, office buildings and hotels.

Method of Application—All Fab-Rik-O-Na Cloth Wall Coverings are applied to the wall with fresh flour paste. Details with directions are contained in each roll of goods.

Kling-Ko-Na Undercoating and Size

A white powder prepared for use by adding water. For use in preparing walls for papering, painting or enameling, and over painted or varnished walls before hanging wall coverings. Also over dyed burlap or raw woodwork before painting.

Can be used on walls of hard or sand finished plaster, stucco, concrete and brick as well as on wall boards.

Service to Architects

We are prepared to co-operate with architects by offering quotations, special samples and practical suggestions for the use of our decorative products.

Distribution

Stocks of Fab-Rik-O-Na products are carried at Bloomfield, N. J. Shipments can be made direct, or deliveries made from any reliable jobbers located in the principal cities of the United States and Canada.

Suggested Specifications

General—All decorative and prepared canvas, burlap or other fabrics used shall be of the kind below specified and quality of those shown in the Fab-Rik-O-Na line of cloth wall coverings of the H. B. WIGGIN'S SONS Co. of Bloomfield, N. J., and equal to samples of this material on file in the architect's office.

Location—The above wall coverings shall be applied on ceilings and walls of the following.....

Application—After walls have been plastered in accordance with specifications for plastering, and are thoroughly dry, they shall be given a coat of Kling-Ko-Na Size manufactured by the same company.

Old walls shall be thoroughly cleaned and all cracks filled. All edges of cracks and patches shall be sandpapered to a smooth, level surface. Walls shall be made smooth and clean, and sized as above described.

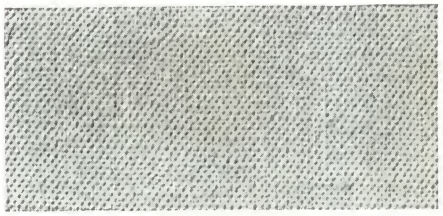
If the fabric is not to be painted, it is customary to apply a good grade of lining paper before hanging, allowing the paper to become thoroughly dry before applying the fabric.

The condition of the wall determines the necessity for a lining. Where the wall is in good condition, clean and free from hot spots, the lining may be omitted.

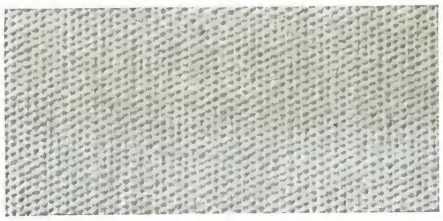
If the fabric is to be painted no lining is required.

The fabrics then shall be pasted to the wall with good, stiff, fresh flour paste. In the hanging edges of successive lengths are to be butted after having been trimmed to a true smooth edge. Printed directions packed with the goods when shipped shall be carefully followed.

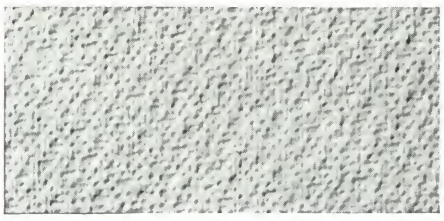
Painting—Where Fab-Rik-O-Na prepared goods are used, they shall be given ..... coats of paint as herein specified.



Wiggin's Wall Canvas
36, 54, 84 and 100 in. wide



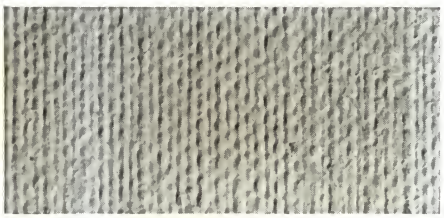
Prepared Canvas
36 in. wide



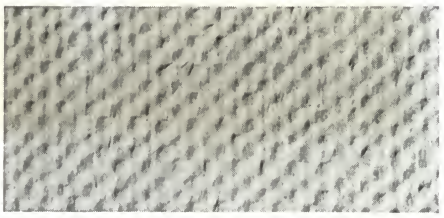
Stipple Canvas
33 in. wide

Hanging Fab-Rik-O-Na Cloth Wall Covering

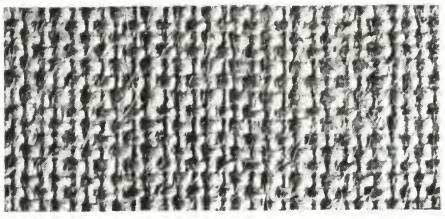
All Fabric Textures are Reproduced Actual Size



No. 10 Filled Canvas
36 in. wide



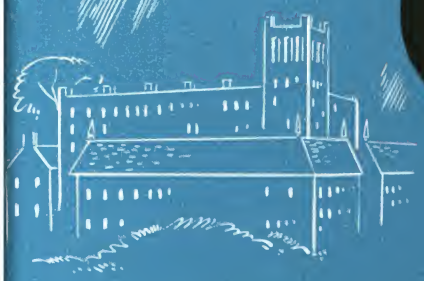
Prepared Burlap
36, 54 and 72 in. wide



No. 2 Filled Burlap
36 and 54 in. wide

BRUCE

Hardwood Flooring and Lumber Products



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BRUCE LARGEST MAKER OF HARDWOOD FLOORINGS

E. L. BRUCE CO. **Memphis, Tenn.**

BRUCE STRIP FLOORING

BRUCE STRIP HARDWOOD FLOORING

With modern flooring plants in six strategic locations, E. L. BRUCE CO. is the world's largest maker of hardwood floorings. Red Oak, White Oak, Maple and Beech are manufactured in all standard sizes and grades.

Bruce Strip Flooring is made from selected lumber that has been carefully and scientifically kiln-dried to the proper moisture content. The flooring machines are the best available, operated by skilled workmen. Each machine is continually inspected and adjusted to insure accurately manufactured flooring that will lay easily and fit properly. The grading on Bruce Flooring is uniform and dependable.

Bruce Strip Flooring is sold through leading retail lumber dealers everywhere. Large stocks are carried in wholesale distributing warehouses in every section of the country.

Bruce Oak and Beech Floorings carry grading certificates of the National Oak Flooring Manufacturers' Association. Bruce Northern Hard Maple Flooring, manufactured at the Reed City, Michigan Plant, carries the Maple Flooring Manufacturers' Association stamp of approval.

[See General Specifications for Hardwood Floors on Page 10]

OAK is the most universally popular of all floorings, offering an ideal combination of beauty and durability which adapts it for use in almost any floor area.

Sizes: $\frac{25}{32}$″ x 3¼″, $\frac{25}{32}$″ x 2¼″, $\frac{25}{32}$″ x 2″, $\frac{25}{32}$″ x 1½″, ½″ x 2″, ½″ x 1½″, ⅜″ x 2″, ⅜″ x 1½″, $\frac{5}{16}$″ x 2″ (square edge). Grades: Clear Quartered White, Clear Quartered Red, Select Quartered White Select Quartered Red, Clear Plain White, Clear Plain Red, Select Plain White, Select Plain Red, No. 1 Common White, No. 1 Common Red, No. 2 Common Mixed, No. 1 Com. & Better Shorts (10″-18″).

MAPLE—This close-grained wood is particularly recommended for floors receiving unusual wear, such as schools, ballrooms, skating rinks, bowling alleys, shops, etc. Tests show that Maple is the most durable of all woods commonly used for flooring.

Sizes: $\frac{25}{32}$″ x 3¼″, $\frac{25}{32}$″ x 2¼, $\frac{25}{32}$″ x 2″, $\frac{25}{32}$″ x 1½″, $\frac{33}{32}$″ x 3¼″, $\frac{33}{32}$″ x 2¼″, $\frac{33}{32}$″ x 2″, $\frac{33}{32}$″ x 1½″, ⅜″ x 2″, ⅜″ x 1½″, $\frac{25}{32}$″ x 3½″ (jointed), $\frac{33}{32}$″ x 3½″ (jointed). Grades: First White, First Grade, Second Grade, Third Grade, Second and Better.

BEECH—In physical properties Beech is very similar to Maple. However, it shows slightly more grain pattern and has more natural color. Suitable for residence use, as well as for hard service in commercial and public buildings. During the past two years there has been a great increase in architects' specifications of Beech Flooring.

Sizes: $\frac{25}{32}$″ x 3¼″, $\frac{25}{32}$″ x 2¼″, $\frac{25}{32}$″ x 1½″. Grades: First Red Beech, First Beech, Second Beech, Third Beech, Second and Better, Third and Better Shorts (10″-18″).

FINISHING HARDWOOD FLOORS

Surface finishes should never be used on hardwood floors, because they form a thin brittle film on top the wood that soon scratches and wears off. The recommended method of finishing is with Bruce Floor Finish, a penetrating seal that is durable, beautiful, and easy to maintain. *(A special section on Bruce Floor Finishes will be found on Page 9.)*

LITERATURE AND DATA

Complete printed information and installation instructions on Bruce Strip Floorings are available on request. If advised the kind of flooring you are interested in and the type of area in which it is to be used, we will be able to furnish specific data that will be of value. (See General Specifications for Hardwood Floors on page 10.)

BRUCE SOLID OAK PLANKS

BRUCE SOLID OAK FLOOR PLANKS

Years ago, in the "handcraft era," floors were built of solid oak planks, rough hewn and varying in widths and lengths. Such floors characterize the architecture of Renaissance Italy, France and Spain, Elizabethan England and Colonial America. Today, Bruce Solid Oak Planks adapt this historical floor to the modern home. They conform to decorative requirements as to nicety of workmanship, but retain the "casual" effect which contributed so much to the charm of the plank floor of our forefathers. Bruce Solid Oak Floor Planks are solid, durable, genuine. They are sterling reproductions of the early "random" floorings.

Styles, Sizes, Woods and Grades

Plank floors may be laid in any of several authentic styles. They may be of varying widths; or, for the more formal interior, of equal widths. Bruce Floor Planks are available in White Oak or Red Oak (plain or quarter sawn); widths of planks—4, 6 and 8 in., with closefitting tongues and grooves on both sides and ends. They can be obtained with $\frac{1}{16}$ in. beveled edges, or with square edges. The beveled edges are of great decorative value in defining individual boards and emphasizing the widths of the planks. The use of walnut or oak plugs and butterfly keys adds a further unique and interesting touch to a Bruce Plank Floor.

Advantages of Bruce Planks

The lumber for Bruce Oak Planks is especially selected straight stock, kiln-dried in modern dry kilns. This flooring is made on special heavy-duty machinery, the largest in use for this purpose. This insures uniform thickness and width, a most important feature. Much plank flooring is made on moulders or light-weight machines which cannot give precision manufacture. Bruce Oak Planks are *both* end-matched *and* side-matched. Bruce is the *only* plank flooring manufacturer to offer special nails, screws and spacer blades to assist in the proper installation of plank floors.

3 GRADES OF BRUCE PLANKS

Bruce "Mansion" Grade

The most uniform in appearance of the three distinctive grades of Bruce Oak Planks

Bruce "Fireside" Grade

Has a limited amount of interesting grade characteristics, such as small tight knots, stains, streaks, etc.

Bruce "Tavern" Grade

Possesses a rich abundance of irregularities and character marks which add to the beauty of the finished floor

LITERATURE

Write E. L. BRUCE CO., Memphis, Tenn., for "Plank Floors—as Crafted by Bruce," a 16-page A.I.A. size booklet in full colors. Also available on request: Leaflet "Historic Plank Floors for the Home of Today," and Application Instructions—Bruce Floor Planks.

The wide surfaces of Solid Oak Planks emphasize the natural beauty of hardwood, making the floor a distinct element in room decoration.

(C) SPECIFICATIONS FOR LAYING BRUCE SOLID OAK PLANK FLOORS

(Also see General Specifications for Hardwood Floors on page 10.)

(C1) Sub-floors

(C1a) **New (Wood)**—Sub-floors shall be kiln-dried, and shall be made of 4 to 6-in. dressed stock, not less than thirteen-sixteenths of an in. ($\frac{13}{16}$ in.) thick, laid diagonally on floor joists not more than sixteen inches (16 in.) on centers. Sub-floors must present an even bearing surface and shall be double face-nailed, preferably with cement-coated eight-penny nails. Sub-floor must be dry at time of top-floor application, as any shrinkage will affect the top-floor.

(C1b) **Old (Wood) Sub-floors or Floors**—All conditions applicable to new wood sub-floors shall apply. All rotten, splintered, weakened or warped boards shall be replaced. All loose nails shall be drawn out and re-nailed.

(C2) Laying

(C2a) All Bruce Solid Oak Planks shall be laid in strict accordance with directions applying to the particular installation as set forth in the current edition of manufacturer's "Application Instructions—Bruce Floor Planks." Particular attention must be given to instructions on allowance for expansion. In general, installation shall be as follows:

(C2b) Planks shall be blind nailed through the tongue every twelve inches (12 in.). In addition, planks shall be securely fastened through the face with screws and nails in accordance with the manufacturers' instructions. Screws shall be countersunk and covered with Bruce Walnut or Oak Plugs ($\frac{3}{4}$ in. diameter and $\frac{1}{4}$ in. thick) using waterproof glue. Nail indentures shall be filled with wood cement.

(Note: Nails and screws of the proper size and type and wood plugs can be furnished at a nominal charge by the manufacturer, E. L. BRUCE CO., *on shipments of plank flooring.)*

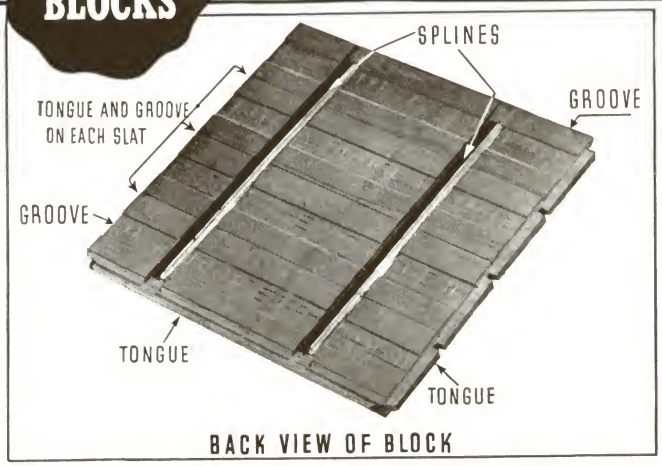
Important Note: *Much greater precaution is necessary in laying Plank Flooring than is required for narrow strip flooring. The following points should be watched carefully and handled in strict accordance with the manufacturer's printed instructions. (1) In all except extremely dry climates (such as Arizona) a spacer blade (as furnished by the manufacturer,* E. L. BRUCE CO., *on all shipments of plank flooring) or other flat piece of steel at least one-thirty-second of an inch ($\frac{1}{32}$ in.) thick must be temporarily inserted in the lengthwise joint between the strips at the point of nailing. This provides some area between the strips for later expansion and is for the purpose of avoiding cupping and buckling. (2) New construction is necessarily damp. Allow a substantial period of drying with air circulation and artificial heat before application of floor. Sub-floors, joists, etc., must be thoroughly dry. (3) Construction which permits abnormal humidity is hazardous. Basements and areas between the floor and the earth must be generously ventilated. A damp condition cannot be permitted or trouble will result.*

Laying Planks Over Concrete: *Unless conditions are ideal, Planks should not be laid over concrete. Concrete in all cases must be membrane-waterproofed according to manufacturer's printed instructions and have a substantial period of drying with artificial heat. Over the membrane apply a Sub-floor Grade of Bruce Blocks laid in mastic. These will serve as an ideal sub-floor to which the Planks can be nailed and screwed in the regular manner. This method of application provides a quiet floor not subject to the drum effect resulting from the use of screeds over concrete.*

IMPORTANT NOTICE

Bruce Planks can now be secured with a complete factory-finish (see page 8). The same methods and materials are used that have proved so successful on Bruce Finished Blocks. Write for information and literature on Bruce Finished Planks.

BRUCE BLOCKS — PATTERNED HARDWOOD FLOORS



BACK VIEW OF BLOCK

TECHNICAL FEATURES OF BRUCE BLOCK

(A Bruce Block (Mastic) is pictured above. The Bruce Block (Nail) has drilled nail-holes in the tongues.)

The Bruce Block is made from strips of flooring, bound together by steel splines imbedded in the back of block—which prevent vertical or longitudinal movement, while permitting the slats to expand or contract individually. (A solid or laminated piece of wood, or pieces positively joined together by glue or otherwise, would shrink or expand as a unit.) In a Bruce Block there is a tongue and groove on every slat of the block as well as two tongues and two grooves on the outer edges of each block. The tongues are a part of the wood itself, not separate slip tongues. This construction makes a perfectly integrated block and a perfectly integrated block floor.

INSTALLATION BY NAILING

The Bruce Block (Nail) is specifically designed for nailing over wood subfloors or old wood floors. An equal number of right-tongue and left-tongue blocks is shipped on each order, so that tongues are always exposed for blind nailing as the floor is laid. The tongues have drilled nail-holes, which facilitate nailing and prevent splitting, and which are so spaced that nails will hold the blocks firmly in place.

Bruce Blocks can easily be installed by following simple directions. They are nailed like strip flooring, and no extra equipment or especially trained mechanics are required. The Bruce Block (Nail) makes it practical to use Block floors in homes, apartments, and other areas with wood subfloors; whereas, in the past, the use of these distinctive floors has been restricted mainly to large areas where they could be laid in mastic over concrete subfloors. *(See Specifications, page 10. Also refer to Installation Manual for Bruce Wood Block Floors.)*

INSTALLATION IN MASTIC

Bruce Blocks (Mastic) are laid in Everbond X Floor Mastic. (See page 11.) This type of installation is to be used where there is a concrete, steel or similar subfloor. Installation of blocks in mastic over a wood subfloor is usually not recommended, the logical method of application over a wood subfloor being by nailing. *(See Specifications for Laying Bruce Block Floors on page 10.)*

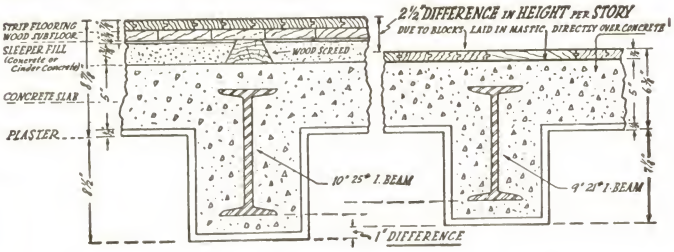
The application of the Blocks in Everbond X provides a substantial thickness of mastic between the blocks and the concrete or other subfloor, and thereby furnishes an insect-deterrent under-layer of material. The bed of Everbond also acts as a cushion and provides a quiet and resilient floor.

Other advantages of a Bruce Block Floor laid in mastic are: (1) Elimination of possibility of rotting screeds. (2) Very sanitary, being laid directly over subfloor with no air space underneath. (3) Less fire hazard; test fires built on this type of floor would not spread. (4) Saving in construction costs. (See diagram and explanation below.)

ECONOMY IN LAYING OVER CONCRETE

Bruce Blocks, laid in Everbond X Mastic directly over concrete, save the material and labor cost of wood subfloor, screeds and cinder fill; also approximately 2½ in. height per story, without loss of headroom.

In large areas this combined saving sometimes exceeds the entire cost of the floor laid and finished.



MODERNIZING WITH BRUCE BLOCKS

The pictures below indicate how easily Bruce Blocks can be installed over old floors, either by nailing or by laying in mastic. In these two cases, Bruce Finished Blocks were used—and the floors were laid without disturbing the occupants or interrupting business routine. "When it's laid, it's finished."

BRUCE BLOCKS

PATTERNED HARDWOOD FLOORS

BRUCE BLOCK FLOORS HAVE BEEN WIDELY USED IN

Residences	Ballrooms	Banks
Apartments	Hospitals	Post Offices
Offices	Schools	Churches
Stores	Gymnasiums	Clubs
Hotels	Factories	Colleges

Millions of feet of Bruce Blocks are now giving service and satisfaction in structures of all types.

RESIDENCE—Bruce Select Plain Red Oak Blocks in Birchwood Beach, Mich. House
JOHN LLOYD WRIGHT, Architect

OFFICE—Bruce First Black Walnut Blocks in Private Office—Max Factor Studios, Hollywood, Cal.
S. CHARLES LEE, Architect

STORE—Bruce Select Red Oak Blocks (50,000 Sq. Ft.) Lowenstein's Department Store, Memphis, Tenn. This factory-finished floor was laid without interrupting business.

HOUSING PROJECT—750,000 Sq. Ft. Bruce Oak Blocks Installed in the 1388 Apartments in the Hillside Housing Development, Bronx, N. Y.
CLARENCE S. STEIN and FRANK E. VITOLO, Architects

CLUB—Bruce First Maple Blocks in Special Design at Club Casanova, Hollywood, Cal.

GYMNASIUM—Bruce Second Maple Blocks (31,000 Sq. Ft.) in Rufus King High School, Milwaukee, Wis.
G. E. WILEY, Architect

BAKERY—Bruce Second Maple Blocks in Colonial Baking Co., Indianapolis, Ind.
D. A. BOHLEN & SONS, Architects

PATTERNED HARDWOOD OFFERS

BRUCE BLOCKS

This is a flooring beautiful and distinctive enough for the finest homes, yet durable and economical enough for commercial and public areas. Manufactured in Oak, Maple, Beech and Walnut—in all standard flooring grades—Bruce Blocks offer almost unlimited choice from the standpoint of purpose, decorative effect, and cost. Following are a few of the many advantages of this modern type of hardwood flooring:

BEAUTY

● No other material can approach the beauty of wood. Add to this the simple charm of the Bruce Block design, and you have floors of distinction and character. The natural beauty of hardwood is enhanced in a rich new setting.

DISTINCTIVE DECORATION

● Bruce Blocks possess all the requisites of an ideal decorative material. Strikingly distinctive and unusual in appearance, they give style to floors and enhance the beauty of interiors.

WARMTH-QUIET

● Warmth is essential in a floor, for the sake of comfort, health and economy. The high heat-insulating value of a hardwood floor is well known. Furthermore, a Bruce Block Floor is quiet and sound-absorbing.

DURABILITY

● These patented Blocks are fabricated from regular full-thickness hardwood strip flooring, firmly fastened together with steel splines, and have interlocking tongues and grooves. The result: A floor that will ordinarily last "the lifetime of a building."

EASY MAINTENANCE

● A Bruce Block Floor can be maintained at a cost less than that for almost all substitutes for hardwood flooring. In case of unusual wear or accidental damage worn portions can be replaced inexpensively and easily.

A WORD ABOUT COST

● In large areas, the cost of a Bruce Block Floor is often less than for ordinary floors. (See diagram on page 4.) In homes and other small areas the added cost is usually no more than a few dollars per room. The lower-priced grades of Bruce Blocks can be used without sacrificing beauty.

ADVANTAGES OF BRUCE FINISHED BLOCKS

For over four years E. L. Bruce Co. has been factory-finishing Bruce Blocks with amazing results. The finish is superior in beauty and durability, and cannot be duplicated by ordinary methods. Furthermore, factory-finishing eliminates mess and inconvenience on the job—a particularly important factor in remodeling work. It makes it possible for the owner to know, in advance, exactly how the completed floor will look. (See page 8 for description of factory-finishing process.)

**All the floor sections pictured are composed of Bruce Finished Blocks (factory-finished), except the Maple which was finished by regular methods used after installation.*

OAK (Clear Quartered White)—LIGHT FINISH

OAK (No. 1 Common Red)—MEDIUM FINISH

OAK ("Arabesque" Grade)—DARK FINISH

Every Quality of an Ideal Floor

OAK (Select White)—Alternate Light and Dark Finish

MAPLE (First Grade)—Natural Finish*

WALNUT (First Black)—Natural Finish

WOODS, GRADES, SIZES

OAK

Clear Qtd. White
Clear Qtd. Red
Select Qtd. White
Select Qtd. Red
Clear Plain White
Clear Plain Red
Select Plain White
Select Plain Red
No. 1 Com. White
No. 1 Com. Red
No. 2 Com. Mixed
Arabesque
Economy

BEECH

First Red
First
Second
Third
Economy

MAPLE

First White
First
Second
Second and Better
Third
Economy

WALNUT

First Black
Second

TABLE OF SIZES

Strip Size	25/32x2¼"	25/32x1½"	½x2"
Block Size	6¾x6¾" 9x9" 11¼x11¼" 6¾x13½"	7½x7½" 9x9"	8x8" 10x10"

Strip Size	½x1½"	33/32x2¼"	33/32x1½"
Block Size	7½x7½" 9x9"	6¾x6¾" 9x9" 11¼x11¼" 6¾x13½"	7½x7½" 9x9"

FINISHES

Bruce Finished Blocks are completely finished by machine, even to waxing and polishing (*See page 8*). Oak, in any grade, can be finished Light, Medium or Dark—as specified. Maple, Beech and Walnut are finished in natural shades only. An added feature of the Bruce Finished Block is the beveled edges, which form small V-joints in the floor and emphasize the patterned design. *UNFINISHED BLOCKS—Bruce Blocks in any of the woods, grades, and sizes listed can be obtained *unfinished,* to be finished after installation. Unfinished Blocks are manufactured with square edges (unbeveled) as illustrated by the section of Maple Blocks on this page.

LITERATURE AND DATA

Architects' Data Sheets, loose leaf A.I.A. file size.
Illustrated Booklet—"Patterned Hardwood Floors."
Installation Manual for Bruce Mastic and Nail Blocks.
Brochure of Photographs of Bruce Block Floors.
Leaflet—"Here's Grand News."
Sample of Bruce Block furnished on request.

FACTORY FINISHED FLOORING

PREFINISHED BLOCKS AND PLANKS

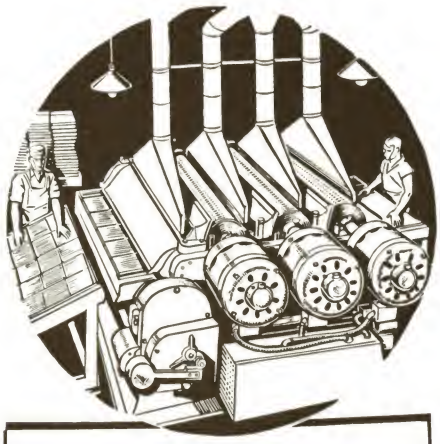
Bruce Blocks and Bruce Planks (see pages 3-7 in this section) may be obtained completely finished at the factory by the methods briefly described and pictured below. Oak is finished Light, Medium or Dark—as specified. Maple, Beech and Walnut are finished in Natural Shade only. Bruce Finished Flooring is manufactured with slightly beveled edges. This emphasizes the floor design and has the practical purpose of preventing any appearance of uneveness due to slight irregularities in the subfloor.

ADVANTAGES OF PREFINISHING

First, the factory-finish is more beautiful, uniform, and durable than could possibly be secured by ordinary methods. Second, the owner can see in advance exactly how the finish will appear, can select the shade desired. Third, the noise and mess of finishing on the job are eliminated. Fourth, considerable time is saved.

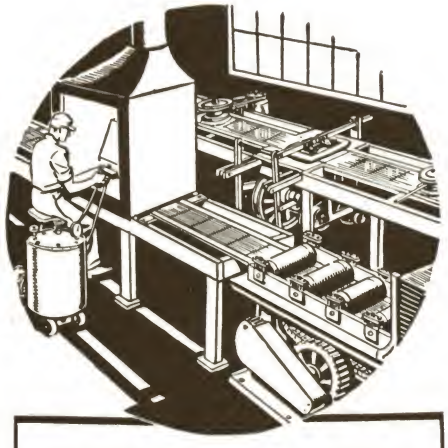
IDEAL FOR REMODELING JOBS

With Bruce Finished Flooring it is possible to lay a new Block or Plank floor over an old floor without inconvenience to occupants. Furniture and fixtures can be moved to one side while one section of flooring is being laid, and then moved back while the balance of the room is being completed. Entire floors of commercial buildings have been refloored with Bruce Finished Flooring "while business went on as usual."



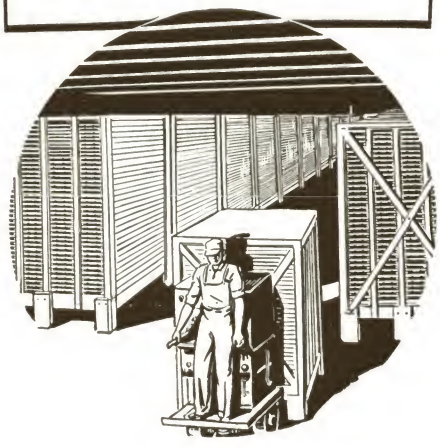
1. SANDING—First, the flooring is sanded to proper smoothness on a machine of the type used on fine furniture parts. No other method could give such a uniform surface. Sanding is one of the most important steps in floor finishing.

2. FINISHING—A penetrating-seal type of finish (Bruce Floor Finish) recommended by both hardwood flooring associations is used exclusively. This finish is imbedded in the wood and will not crack or peel like ordinary surface finishes.

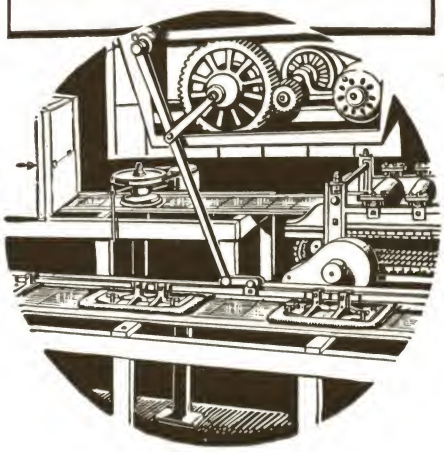


3. FILLING—Next, a paste wood filler is pressure-applied, rubbed in, and buffed by machine. If the flooring is to be finished in a Medium or Dark shade, a stain of highest quality is added to the filler. This filling and staining is always uniform.

4. DRYING—Temperature and humidity conditions are accurately controlled, and finishing materials are allowed to dry and set thoroughly between each operation. This solves a problem which causes so many failures in finishing on the job.



5. WAXING—This brings out the full beauty of the wood and protects the finish. After the application of Bruce Tuf-Lustre, a wax far more durable than regular floor wax, each piece passes through a series of five buffing and polishing machines.



6. PACKAGING—This last step in the factory insures the flooring reaching its destination in perfect condition. After a final inspection, it is packaged in sealed cartons and is then ready for delivery and installation.

BRUCE FLOOR FINISHES

FLOOR FINISHES, WAXES, POLISH, CLEANER

The beauty and durability of floors depend on the method of finishing as well as on the quality of the flooring. Therefore, the world's largest maker of hardwood floorings, E. L. BRUCE CO., has a natural interest in the proper finishing of floors.

After years of research, experimentation and observation, this company has developed the Bruce Penetrating Seal Method of finishing wood floors. This superior method has now been successfully used and tested for over eight years on floors of all types throughout the country. The materials involved are the same that have proved so satisfactory in the prefinishing of Bruce Factory Finished Flooring. (See page 8.)

"Bruce-Way" Floor Finishing has been approved by the National Oak Flooring Manufacturers' Association and the Maple Flooring Manufacturers' Association. Neither of these associations approves any type of finish other than a penetrating seal.

ADVANTAGES

Old Way

Varnish, lacquer or shellac form a film or surface coat on top the wood. Friction causes this to scratch, scale, dust and wear off—leaving the floor unprotected. Dirt, stains, etc., get into the wood and floor cannot be kept in good condition. Worn spots necessitate complete refinishing, or laps will show. A surface finish is hard and slippery.

Bruce Way

Bruce Floor Finish penetrates the wood and sets up a tough, flexible seal which resists scratching and marring. The surface is sealed, and dirt, stains, etc., can easily be removed from floor. Spots worn where traffic is unusually heavy can be retouched without showing laps. This type of finishing preserves the wood and enhances its natural beauty.

BRIEF SPECIFICATIONS

Materials and Work Included

The floors in the following areas shall be finished with Bruce Floor Finish (and Bruce Tuf-Lustre or Bruce Wax) as manufactured by E. L. BRUCE CO., Memphis, Tenn., in strict accordance with their directions: *(Here list and locate areas.)*

Preparatory

Sanding, filling and other preparatory work is so important to the success of the subsequent finishing that no attempt should be made to summarize these operations. "How to Finish and Maintain Wood Floors," available from E. L. BRUCE CO., Memphis, Tenn., contains detailed recommendations applying to various types of old and new floors.

Application

On floors in large areas—such as stores, schools, ballrooms, public buildings, etc.—where a waxed surface is not desired, instruct that floors be finished with Bruce Floor Finish in strict accordance with manufacturers' detailed directions applying to the particular type of floor. In the case of residence, office or apartment floors, instruct that floor be finished with Bruce Floor Finish and afterwards waxed with Bruce Tuf-Lustre or Bruce Wax according to manufacturer's instructions. Gymnasium floors should be finished with Bruce Gymnasium Finish.

BRUCE FLOOR FINISH

A combination of vegetable oils, varnish gums, and quick-acting solvents which give penetration, durability and resistance to moisture. Does not darken the wood and forms a non-slippery surface. Covers approximately 1000 sq. ft. per gallon one coat, and only one coat is needed in most instances.

BRUCE TUF-LUSTRE

A varnish-aided liquid wax which acts as a preservative and polish when applied over floor finish or varnish. It dries quickly, does not become brittle, and tests show that it has three times the durability of regular floor wax. Gives a non-slippery surface which may be readily cleaned by dry sweeping. Covers 1000 sq. ft. per gallon first coat and 2000 sq. ft. for second coat.

BRUCE PREPARED PASTE WAX

This improved type of paste wax is especially recommended for hardwood floors. Can be applied over penetrating seal, filler, lacquer, varnish, shellac or paint. Produces a lustrous surface that is easy to maintain, hard to mar. Can also be used on linoleum, composition, tile and marble floors, and on furniture.

BRUCE FLOOR POLISH

A self-polishing liquid emulsion of Carnauba Wax. It is impervious to oil and grease and emphasizes the color and grain in the finished floor. Requires no polishing to produce a lustre; dries hard in twenty minutes. Recommended also for linoleum, asphalt tile, and other composition floorings. Covers 1000 sq. ft. per gallon.

BRUCE FLOOR CLEANER

A liquid cleaner which will remove wax and dirt on a floor without injuring the finish beneath. Dries rapidly and leaves an extremely thin film of wax on the surface. To be used on wood surfaces only, and not on rubber tile, linoleum, etc. Easy to use. Covers 1500 sq. ft. per gallon.

BRUCE GYMNASIUM FINISH

A finish with 100% Bakelite base, designed for use on gymnasium floors. Bruce Gymnasium Floor Finish resists the action of rubber burns, acids and perspiration. Very durable and easy to maintain. Covers 500 sq. ft. per gallon on first coat, 600 sq. ft. on second coat, and 700 sq. ft. on third coat.

In the Chicago Post Office over 2,000,000 *sq. ft. of Oak and Maple Flooring (in offices and working areas) were finished with Bruce Floor Finishes.*

GENERAL SPECIFICATIONS

GENERAL SPECIFICATIONS FOR HARDWOOD FLOORS

GENERAL SPECIFICATIONS FOR HARDWOOD FLOORS

(Nail Block, Mastic Block, Plank or Strip)

(1) General Conditions

The General Conditions governing the General Contract shall apply to the work under this division of the specifications. *Note: The American Institute of Architects' standard form of General Conditions is advocated.*

(2) Work Included

The work included under this heading shall be the furnishing, laying (and finishing) of hardwood flooring in the following areas:

Note: Here list and locate the areas. If factory-finished flooring is to be used, omit reference to finishing as none is required.

(3) Preliminary Provisions

Provision made under other specifications that all subfloors, trim, etc. shall be installed in accordance with specifications of E. L. BRUCE CO.

(4) Inspection and Cleaning

(4a) **Inspection**—Before laying the flooring this contractor shall carefully inspect all sub-floors, erected trim, etc. and shall notify the architect promptly in writing of any defects which will in any way deleteriously affect the flooring installation. Failure to so notify the architect of these defects will be construed as acceptance of the work as executed and full responsibility for the finished results.

(4b) **Cleaning**—Thoroughly clean all sub-surfaces of dust or other foreign matter before laying the floor.

(5) Materials

(5a) **Flooring**—Finished floors shall be *(here specify whether Bruce Block, Bruce Strip or Bruce Plank Flooring is to be used)* as manufactured by E. L. BRUCE CO. of Memphis, Tenn. Sizes, thicknesses and varieties of wood shall be as listed in paragraph (6).

(5b) **Finish**—*Note: No finishing to be done if factory-finished flooring is to be used. If unfinished flooring is used, here specify the stains, fillers, finishes, etc. selected. We recommend penetrating finishes such as manufactured by* E. L. BRUCE CO. *(See page 9.)*

(6) Patterns, etc.

Note: Here list, locate and describe the various woods, grades, types, sizes and thicknesses of flooring to be used. If Bruce Blocks are to be used, indicate whether Nail or Mastic-Laid type and whether finished or unfinished.

(7) Laying

All flooring shall be laid in strict accordance with directions of E. L. BRUCE CO. applying to particular installation.

Note: Brief specifications covering installation of Bruce Nail Blocks and Bruce Mastic-Laid Blocks are given on this page. See page 3 for brief specifications on Bruce Solid Oak Planks. Complete instructions which must be followed in all cases will be furnished on request to E. L. BRUCE CO. *Strip flooring should be laid in accordance with N.O.F.M.A. and M.F.M.A. standards.*

(8) Sanding and Finishing

(Omit if factory-finished flooring is to be used.)

All floors shall be properly sanded, leaving a smooth surface without sander marks. *Note: Here specify the various steps in the finishing process. If the Bruce Penetrating Seal Method of finishing is specified, instruct that floors be finished in accordance with booklet, "How to Finish and Maintain Wood Floors the Bruce-Way."*

(9) Protection

During all stages of the work the flooring shall be adequately covered and protected from injury until completion and acceptance. It is advisable to delay the installation of floors until other craftsmen finish their work.

(A) SPECIFICATIONS FOR LAYING BRUCE BLOCK FLOORS BY NAILING

(A1) Sub-Floors

(A1a) **New (Wood)**—Solid wood sub-floors shall be thoroughly seasoned and dry, and shall be made of not wider than six-inch (6 in.) dressed stock, not less than thirteen-sixteenth inch ($\frac{13}{16}$ in.) thick; floor joists not more than sixteen inches (16 in.) on centers. Sub-floor must present an even bearing surface and shall be double face-nailed, preferably with cement-coated eight-penny nails. Place one layer of 15-pound tarred or asphalt felt between sub-floor and finished floor.

(A1b) **Old (Wood) Sub-Floors or Floors**—All conditions applicable to new wood sub-floors shall apply. All rotten, splintered, weakened or warped boards shall be replaced. All loose nails shall be drawn out and the boards re-nailed. Place one layer of 15-pound tarred or asphalt felt between sub-floor and finished floor.

(A2) Baseboards, Grounds and Plinths

(A2a) Grounds for baseboard shall be set parallel to and one and three-quarter inches (1¾ in.) above sub-floor. No plastering between lower ground and sub-floor. All baseboards shall be set (after the Block Floor has been laid) so that there shall be one-quarter inch (¼ in.) minimum clearance above top of finished block at all points. Plinth blocks shall be set to a clearance of one-eighth inch (⅛ in.)

(A2b) Base shoe moulds shall project beyond the face of the base at least three-quarters of an inch (¾ in.) and shall be attached to the baseboard only (not to the flooring) with a full one-sixteenth inch ($\frac{1}{16}$ in.) clearance between the surface of the finished floor and the underside of the shoe mould. Attach after flooring has been laid.

(A3) Pipe Collars

(A3a) All electric outlets, radiator connections, piping, etc., shall be provided with suitable collars to cover the necessary expansion area.

(A4) Laying

(A4a) All Bruce Nail Blocks shall be laid in strict accordance with directions applying to the particular installation as set forth in manufacturer's "Installation Manual for Bruce Wood Block Floors." In general, installation is as follows:

(A4b) Blocks shall be blind nailed in nail holes (using 6d casing nails for $\frac{25}{32}$" Blocks; 4d casing nails for ½" Blocks) setting nail heads. Blocks at wall line shall be face nailed on the outer edges which will be covered by base shoe mould.

(B) SPECIFICATIONS FOR LAYING BRUCE BLOCK FLOORS IN MASTIC

(B1) Sub-floors

(B1a) **Concrete**—The topping, or finish coat of the concrete slab, shall be made as follows: Screed off the slab, removing any large rocks that might affect the surface, being careful not to "puddle" the mix until sloppy. Uniformly dust this freshly screeded concrete with a dry mixture of 50 per cent sand and cement. Trowel this dusted surface with a wood float or a leveling darby float to a uniform level finish without projections or depressions. Adequately protect this surface from injury until the concrete slab sub-floor has "set." Protect all sub-floors, as finished, against concrete or plaster droppings. Concrete shall be primed with one coat of Bruce Asphalt Priming Paint or equal, and allowed to dry before laying Blocks. *Note: It is hazardous to install Blocks over a slab surface which is likely to crumble or break bond. This applies particularly to a slab made of materials other than those used in standard concrete. This caution also applies to levelling compounds or other mixes applied over the surface, which lack proper cohesion and may break away from the base slab.*

(B1b) **Old Concrete**—All conditions applicable to new concrete sub-floors shall apply. If sub-floor does not meet requirements and presents an uneven bearing surface, it shall be leveled off in accordance with the specifications, which will be supplied by E. L. BRUCE CO.

(B1c) **Steel**—Steel shall be free from rust, dust, grease and loose foreign matter and free from any projection that might prevent uniform contact of the blocks with the sub-floor surface. Steel shall be primed with one coat of Bruce Asphalt Priming Paint or equal, and allowed to dry before laying Blocks.

(B2) Waterproofing

(B2a) All floors in direct contact with the ground or below grade, or sub-floors above grade where there is not sufficient ventilation to eliminate moisture condensation, shall be membrane waterproofed according to the following specifications: If only a portion of floor is ventilated, or if there is a basement under only a portion of the building, and balance of concrete slab is in direct contact with ground or not properly ventilated, the *entire* floor slab shall be membrane waterproofed.

(B2b) The concrete sub-floor shall be smooth, clean, dry and free from loose material and foreign matter.

(B2c) Over the concrete sub-floor a two-ply membrane waterproofing of *(asphalt) (coal tar pitch)* and *(asphalt saturated) (tarred)* felt shall *be laid. (Note: Select either "asphalt and asphalt saturated felt" or "coal tar pitch and tarred felt" as desired.)*

(B2d) Prime the concrete surface with asphalt primer before application of the membrane waterproofing. *Note: Include only if "asphalt and asphalt saturated felt" are specified.*

(B2e) Coat the entire surface of the concrete sub-floor with waterproofing pitch, into which, while hot, embed a layer of fifteen-pound saturated felt, lapping sheets seventeen inches (17 in.). A half sheet shall be used in starting so that a full two-ply membrane results at all points. The sheets shall be laid without wrinkles, buckles or blisters, and well rubbed into the hot pitch so that a complete bond is obtained between felt and sub-floor. Care shall be taken that the entire surface of the first layer of felt is mopped solid with hot pitch, so that in no place shall felt touch felt. Do not mop top layer. At all wall angles, columns, etc., the felt shall be laid in at a right angle and brought up the wall at least four inches (4 in.) above the finished floor behind the base.

(B3) Baseboard, Grounds and Plinths
(B4) Pipe Collars

Note: Provisions are same as set forth above in sections A2 and A3.

(B5) Laying

(B5a) Bruce Blocks shall be laid in strict accordance with directions applying to the particular installation as set forth in current edition of manufacturer's "Installation Manual for Bruce Wood Block Floors." In general, installation is as follows:

(B5b) In areas where the length greatly exceeds the width—particularly in hallways and corridors—blocks must be laid in diagonal pattern. This also applies to adjoining rooms where Blocks are laid in an unbroken stretch from one room into another. This minimizes the possible length-wise expansion more than when the square pattern is used.

(B5c) Blocks shall be laid to a level surface bedded in Everbond X Mastic (see page 11) without the use of nails or screws. One gallon of Mastic shall be used to cover 25 to 30 ft. of floor area.

(B5d) Blocks shall be laid loose or tight, depending on the humidity conditions of the building and the condition of the sub-floor.

(5e) Around the floor in an average size room allow a minimum expansion space of at least three-quarters of an inch (¾ in.) on each side. In larger areas, figure the expansion space on the basis of one-sixteenth of an inch ($\frac{1}{16}$ in.) for each foot of width and length. The floor must not contact any vertical surface at any point, expansion areas being required. Expansion spaces, where concealed, should be half-filled with Everbond X, poured when hot. Where exposed, cork can be used.

OTHER BRUCE PRODUCTS

YELLOW PINE, EVERBOND X, CEDA'LINE, TERMINIX

BRUCE YELLOW PINE

Bruce Yellow Pine is available in all items of dimension, boards, siding, ceiling, flooring, finish, etc. It is manufactured from close-grained timber at two modern Bruce mills located in the heart of the Mississippi Yellow Pine belt. This stock is dried in the latest type of cross-circulating kilns to insure perfect seasoning. It is milled on most efficient machinery, and is double end-trimmed to insure smooth square ends. As a protection to the building industry and the builder, Bruce Yellow Pine is stamped with our name. It is carefully graded and measures up to highest standards.

Many dealers stock Bruce Yellow Pine. They have found that it has the same dependability that has made Bruce Hardwood Flooring preferred throughout the building industry. This material can be secured from the mills either in straight carload lots or in mixed cars with items of hardwood flooring, moulding and trim, etc.

The Bruce mills specialize in small timber cuttings, and can furnish kiln-dried timbers up to size of 8"x8". Yellow Pine Finish and Trim is kiln-dried down to approximately 5% moisture content to give best results.

BRUCE CEDA'LINE

Ceda'line is cedar closet lining manufactured from the heartwood of Tennessee Aromatic Red Cedar, a wood which imparts an odor pleasing to humans but repellent to moths. With this beautiful material any closet can easily be made into a spacious cedar chest. Any carpenter can quickly install Ceda'line in old or new homes. In building a new home the cost of using Ceda'line in a closet is about the same as for lining it with ordinary lumber or lath and plaster.

Sizes—⅜x2 in., ⅜x2½ in., ⅜x3¼ in. Ceda'line quarter-round and a special size for floors (²⁵/₃₂x2¼ in.,) also available. One grade only, permitting sound knots.

Application—Ceda'line is tongued, grooved and endmatched. Apply Ceda'line by blind nailing to studding over a layer of building paper. Furring strips should be used in applying over lath and plaster in old homes. Use no finish whatsoever, as varnish, paint, etc., destroy aromatic qualities. For maximum protection Ceda'line must be applied to the closet floors and back of doors, as well as to walls and ceilings. Doors must fit tightly.

EVERBOND X FLOOR MASTIC

Everbond X is a newly perfected and improved mastic which sets up quickly and firmly. Has great adhesive and cohesive strength and bonds blocks solidly to sub-floor. Requires slight heating before application. Everbond X is strongly recommended as being more economical to apply and more satisfactory in every way than cold application mastic. Covers approximately 25 sq. ft. to gallon. Adapted to application of any type of blocks, herringbone, or design oak flooring to be laid in mastic. (See page 10 for specifications on installation of Bruce Blocks in mastic.)

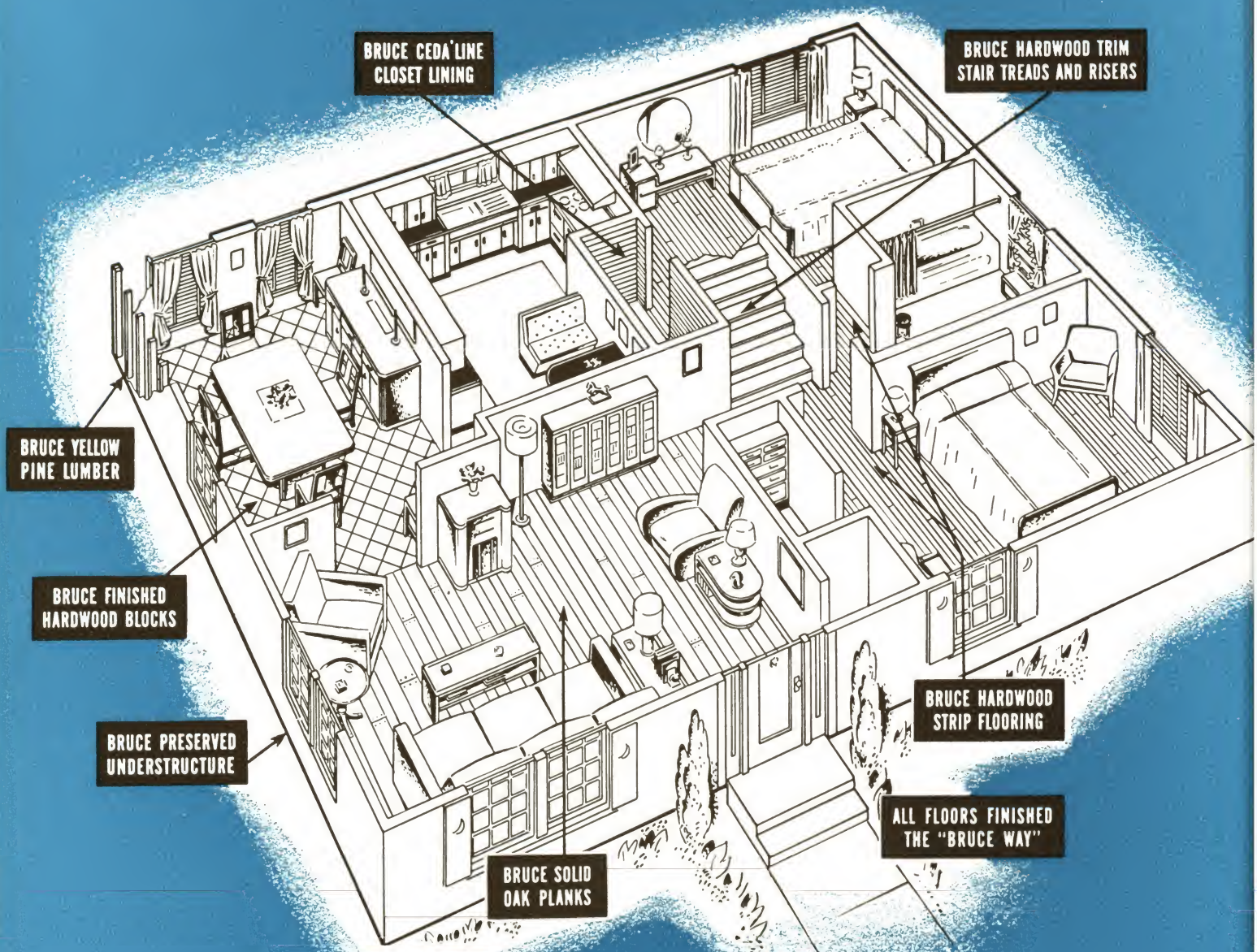
BONDED TERMINIX INSULATION

Terminix, manufactured exclusively by Bruce, is a chemical applied only by Bruce-trained Terminix Application Companies for termite control in homes and buildings. Represented throughout 36 termite-infested States, offices in 150 cities, free termite inspections and reports without obligation. Performance by Terminix Licensees on every standard Terminix Contract for a period of five (5) years is guaranteed by E. L. BRUCE Co. This guaranty is fully insured by Sun Insurance Office Ltd., the world's oldest insurance company. Over 50,000 homes and buildings have been protected with Bonded Terminix Insulation.

A COMPLETE LIST OF BRUCE PRODUCTS—Strip Flooring (Oak, Northern Hard Maple, Beech)—Block Flooring (Oak, Maple, Beech, Walnut)—Plank Flooring (Solid Oak)—Factory-Finished Flooring—Floor Finishes (Floor Finish, Tuf-Lustre, Wax, Cleaner, Polish, Gymnasium Finish)—Everbond X Floor Mastic—Ceda'line (Cedar Closet Lining)—Yellow Pine (Yard and Shed Stock, Timbers)—Hardwood Moulding and Trim (Stair Treads, Risers, Etc.)—Southern Hardwoods (Air Dried and Kiln Dried)—Hardwood Dimension—Bruce Preservatives—Terminix.

HOW BRUCE PRODUCTS FIT

Into a modern Residence



E. L. BRUCE CO.

EXECUTIVE OFFICES
MEMPHIS, TENN.

●

MILLS AT: Little Rock, Ark.; Nashville and Memphis, Tenn.; Laurel and Bruce, Miss.; Oak Grove, La.; Cairo, Ill.; Reed City, Mich.; Toronto, Canada

●

Representatives in All Principal Cities

BRUCE — LARGEST MAKER OF HARDWOOD FLOORINGS

THERE IS NO SUBSTITUTE FOR HARDWOOD FLOORS

SECTION 11

CONTINUED ⟶

THE CROMAR COMPANY

MANUFACTURERS SINCE 1919

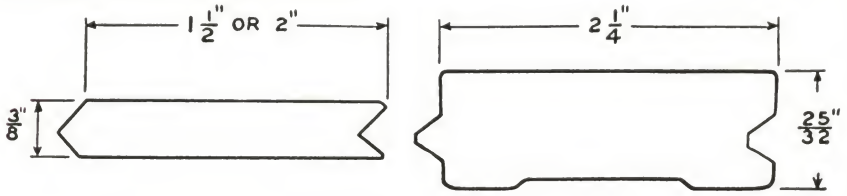
Cromar Factory Finished Oak Flooring

WILLIAMSPORT, PA.

DESCRIPTION OF CROMAR FACTORY FINISHED OAK FLOORING

Lumber—Red and White Oak of a high grade—scientifically air seasoned at least twelve months and kiln dried twelve to fifteen days to the correct moisture content.

Construction—V-type hinge joint beveled nailing edge to prevent damage in laying, and nail holes already punched to speed installation. 3/8" is cut square on the ends and with the V-type side joint it is simple to get tight end joints. The 25/32" is end matched with a tongue longer than normal and rounded on edges for self leveling purposes.



Finish—A penetrating sealer that soaks into the wood, seals the pores and binds together the wood fibers. A heavy bodied waxlike compound is ironed into the pores with heat and pressure. The compound combines with the sealer and becomes a part of the wood itself. Retains necessary resiliency and does not become brittle to scuff off and wear away under foot traffic. An "in the wood" finish that will long outwear the usual surface finish which lies on top of the floor.

Maintenance—Use a dry dust mop or cloth in the usual way. Touch up traffic ways a couple of times a year with wax. No need to wax balance of exposed floor more than once annually —usually only every two years.

Moisture Resisting Treatment — The sealer applied to all four sides has splendid moisture resisting qualities and protects the flooring in transit, in the warehouse and even after the flooring is laid. Protected in this way, you are surer of a flooring installation that will continue to be a satisfaction to your clients in the years to come.

Quantity Required—Use universal flooring rule, adding to square footage 25% for 2" and 33⅓% for 1½" and 2¼" flooring.

Installation—Cromar is installed just like any other strip flooring. In old buildings it is laid right over the existing floor and, in new construction, over the sub-floor.

Shipping Protection—Crated in compact bundles and bound with metal bands to insure delivery on your jobs in perfect condition.

Distribution—All Cromar products are sold by the better retail lumber dealers. Write direct to THE CROMAR COMPANY for literature and samples. On special request, sample bundles of flooring will be furnished.

ITEMS AVAILABLE

Kind	Size	Grade	Color
Plain White Oak	3/8" x 1½" or 2"	No. 1 (Clear)	Golden Brown
Quartered White Oak	3/8" x 1½" or 2"	No. 1 (Clear)	Golden Brown
Plain White Oak	3/8" x 1½" or 2"	No. 2 (Select)	Golden Brown
Quartered White Oak	3/8" x 1½" or 2"	No. 2 (Select)	Golden Brown
Charter Oak (Plain White)	3/8" x 1½"	Combination Nos. 1 and 2	Golden Brown
Charter Oak (Plain Red)	3/8" x 1½" or 2"	No. 1 (Clear)	Nut Brown
*Charter Oak (Plain Red)	25/32" x 2¼"	No. 1 (Clear)	Nut Brown
†Kurly Oak	3/8" x 2"	Kurly Oak	Nut Brown

*Cromar 25/32" x 2¼" flooring brings to the trade for the first time an advantage they have long desired. In it is nothing over 9' long, yet only a very small percentage under 3'. Handling is easier and cutting and fitting of long lengths are eliminated. There are fewer "shorts" and the 9' lengths are straighter than is usually the case with longer ones, which facilitates laying in mastic. Installation costs are reduced at no sacrifice in the quality of the floor or its attractiveness.

†Kurly Oak is selected for sworls, wavy grain and distinctive grain figure. It is intended for those who want a unique and extremely beautiful floor.

Suggested Specifications

1. All finish flooring shall be Cromar Factory Finished Flooring, prefinished at factory on face and treated on back and edges to resist moisture, as manufactured by THE CROMAR COMPANY, Williamsport, Pa.

2. All flooring for (state locations) shall be (specify width, thickness, grade and color).

3. All sub-floor surfaces in rooms or spaces that are to have Cromar finished flooring shall be brought to level, plane surfaces as closely as possible.

Note to Architect—No. 3 above applies principally to relaying jobs. For new construction we recommend No. 3a for subflooring specifications.

3a. Sub-floors shall be 1" x 4" or 1" x 6" even thickness, square edge No. 2 Yellow Pine. Subfloor shall be surface nailed with 8d nails in middle of boards, sufficient to hold them in place. Just before Cromar is laid the sub-floor should be renailed with 8d nails on edges on each bearing. This will straighten out the sub-floor boards and minimize squeaks.

4. Over all sub-floor surfaces lay one thickness of Cromar moisture proof paper with edges overlapped not less than 2".

5. Unless sub-floors are laid diagonally, all Cromar strips are to be laid at a right angle to the boards in the sub-floor.

6. All 3/8" Cromar Flooring shall be laid with 1½" x 15½ gauge cement coated wire nails, nailing every other one of the holes punched in the tongue and nailing both end holes in each strip. (Or, all 25/32" Cromar Flooring shall be laid with 7d x 2¼" wire flooring brads, nailing on 10" centers and nailing in both end nail holes of each strip.) Nails shall be driven snug but not set. Strips shall not be "blocked" when nailing. When necessary to cut lengths of strips, all end joints shall be made accurately, using a sharp, fine cutting saw and mitre box.

7. In general, the laying of Cromar Flooring shall be done in accordance with the manufacturer's printed instructions.

8. The floor moulding shall be 3/8" x 3/4" with beveled edge end finished exactly like the flooring. It shall be equal to the finished moulding as manufactured by THE CROMAR COMPANY.

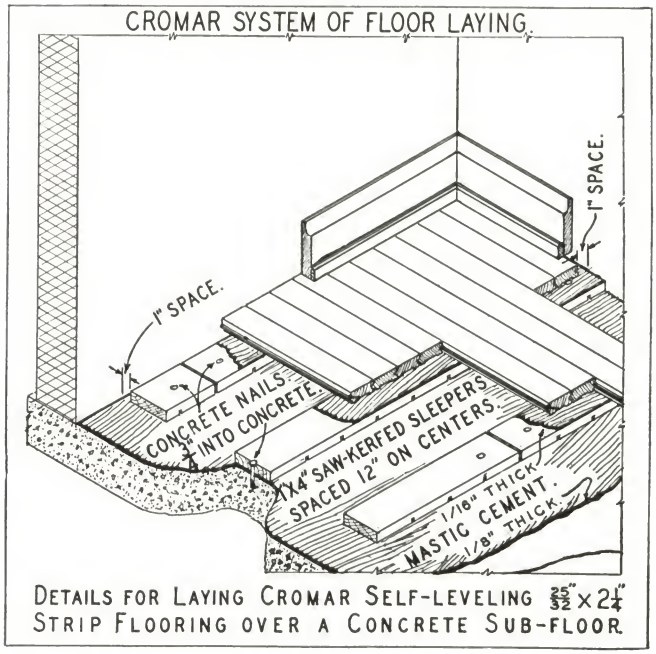
A True Reproduction of the Grain Character to be Had in a Nut Brown Cromar Floor.

America's Oldest and Largest Exclusive Producers of Factory Finished Fine Oak Floors

INSTALLATION OVER CONCRETE

Cromar System (Patented) of Installing Cromar Strip Oak Flooring over Concrete Subfloor Construction.

Advantages—Minimizes hazards of installing wood floors over concrete. Chances of floor becoming distorted are remote. Lower installation costs. Mastic cannot creep up to discolor surface of finished floor. Floor surface is level.



DETAILS FOR LAYING CROMAR SELF-LEVELING $\frac{25}{32}$"X2¼" STRIP FLOORING OVER A CONCRETE SUB-FLOOR

Specifications for the Cromar System of Installing Wood Floors Over Concrete

The surface of the concrete shall meet the usual requirements, being level and reasonably smooth. It shall be free from any foreign materials and swept clean. An application of any approved primer shall be applied according to manufacturer's instructions. When the primer is dry, a ⅛" coat of an approved mastic shall be applied. Into the mastic there shall be imbedded, on 12" centers, 1" x 4" softwood sleepers surfaced on one side to ⅞" thickness. The rough side shall be sawkerfed to a depth of ¼" on 4" to 6" centers and the sawkerf face shall be down.

Hardened nails for concrete, sufficiently long to penetrate the concrete ⅝", shall be driven straight through the wood sleepers on 3' centers.

For cushioning effect and additional holding power, we recommend that 1/16" coat of mastic be applied to the tops of the sleepers and the flooring imbedded therein.

In laying the first strip of Cromar, keep it as far from the paralleling baseboard as will be covered by the base shoe. This strip shall be firmly secured to the sleepers by surface nailing, so as to cover with the base mould, as well as through the tongue. The remainder of strips must be nailed through the tongue on 12" centers, using 6d x 1¾" nails. Longer nails will penetrate the sleepers, forcing them away from the concrete.

Where ends of flooring strips do not abutt on sleepers, the ends must be supported with a small section of a sleeper.

See diagram for further details.

TONE-PHLEX PENETRATING FINISH

Tone-Phlex Penetrating Finish is a formula consisting of oils and gums noted for their wear and moisture resisting properties. It dries hard, yet is flexible—it is not greasy, so does not accumulate and hold dust and grime.

Tone-Phlex is light in color, contains more than 30% nonvolatile and does not darken wood, terrazzo or porous surfaces such as concrete and magnesite. It has been used extensively for finishing floors and trim, not only in homes, apartments and hotels, but in armories, gymnasiums, school houses and post offices as well. It has been specified by many architects and used and approved by the United States and numerous state governments.

Coverage is 500 to 1000 square feet per gallon, depending upon porosity of the surface. One heavy coat is usually sufficient. In residences, apartments, etc. where a sheen is desired, apply one coat of Cromar Wax over the Tone-Phlex.

Suggested Specifications

The floors (list areas) shall be finished with (state number) coats of Cromar Tone-Phlex Penetrating Finish as manufactured by The Cromar Company, Williamsport, Pa. Application shall be strictly in accordance with the manufacturer's directions. (Add following if wax finish is desired.) Over the Tone-Phlex apply (specify number—one usually is sufficient) coats of Cromar Wax, following manufacturer's directions and polishing, when dry, to a high lustre.

OTHER CROMAR PRODUCTS

Cromar Wax—Hard, non-slippery and polishes to a high lustre. Paste and Liquid in both light and Dark colors.

Cromar Cleaner—Excellent for cleaning any varnished, shellacked or waxed surface.

Cromar Finished Base Shoe—⅜" x ¾" with beveled edge.

Mahogany Border Strip—V-matched and factory finished.

Cromar Cement Coated Wire Nails—15½ gauge x 1¼".

Advantages of Specifying Factory Finished Cromar Oak Floors

Superior Finish—Being actually ironed into the wood, it *wears longer*—is more easily cared for if abused, is simple to restore to its original beauty.

Expansion Chamber—Cromar is the only floor we know of that, in its construction, provides a chamber to absorb normal expansion that must be expected of any floor. Our V-type expansion chamber provides for 1¼" swelling in a room 14' wide which is more than usual expansion.

Pre-view — By specifying Cromar you know just exactly what the completed floor is going to be. There is no question about finishing materials, their application, color, or the quality of the finished floor.

Convenience—*New Construction*—After all other interior work is completed, Cromar is installed. And, being completely finished, there is a time saving of a week or more.

Handling the floor installation in this way allows excess moisture in plaster to evaporate and the entire building to dry out before flooring is even delivered on the job. The common objections to installing floors at this time—sanding dust all over the building, finishing materials splashed on baseboards, etc.—are eliminated with Cromar. Also, a floor laid before building is dry absorbs moisture which may later dry out, leaving open side joints. *Cromar* is the practical floor to install *after* all other work is completed.

Remodeling—In occupied homes, Cromar eliminates sanding dust, offensive finishing odors and the lost use of rooms for days, waiting for finish to dry. Cromar is a floor of the highest quality, conveniently installed and insuring years of satisfaction.

The Uniform Color and Texture of a Cromar Floor Set off This Room's Furnishings to Splendid Advantage.

HARRIS MANUFACTURING COMPANY

ESTABLISHED 1898

Manufacturers of Appalachian Oak and Hard Maple Flooring

GENERAL OFFICE

JOHNSON CITY, TENN.

METROPOLITAN NEW YORK DISTRIBUTOR

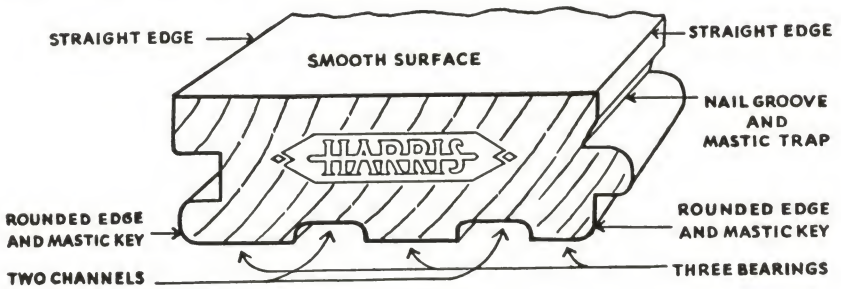
HARRIS FLOORING COMPANY

21-33 Borden Avenue, LONG ISLAND CITY, N. Y.—Telephone: STillwell 4-3650

DEALERS IN ALL PRINCIPAL CITIES

HARRIS BRAND STRAIGHT EDGE FLOORING

A Tongued and Grooved Flooring Having Unusual Features



Full Size Cross Section Harris Brand Flooring (Patent No. 2008238)

THE EXTRA QUALITY FEATURES OF HARRIS BRAND FLOORING

STRAIGHT-EDGE — Special machinery has been installed which removes all side bends and crooks that are inherent in air-dried and kiln-dried lumber. Manufacturing the HARRIS way produces perfectly straight pieces of Flooring.

SMOOTH SURFACE — High speed modern machinery produces a smooth surface that requires a minimum of sanding or scraping.

NAIL GROOVE AND MASTIC TRAP have been provided to allow for faster and more accurate nailing, and to take up excess mastic if laid on concrete.

ROUNDED BOTTOM EDGE AND MASTIC KEY permit smooth and quick handling, and remove the danger of splinters. The Flooring slides easily over the building paper without crimping. The Mastic Key provides adequately for holding and taking up the surplus mastic when laid on concrete.

TWO CHANNELS IN BACK are spaced so as to equalize any absorption of moisture, thereby reducing to a minimum the possibility of cupping.

THREE BEARINGS ON FLOOR distribute the load that the flooring is to carry. When the flooring is ripped lengthwise, two bearings will remain on the floor.

These added Quality Features will mean easier and faster laying and scraping, which reduces the cost several dollars per thousand.

BRIEF SPECIFICATION

All wood flooring where indicated on the plans shall be "HARRIS BRAND FLOORING" as branded by the manufacturer, the HARRIS MANUFACTURING COMPANY, of Johnson City, Tenn.

(Detailed specification furnished on request.)

QUALITY FLOORING AT NO EXTRA COST

HARRIS BRAND STRAIGHT-EDGE FLOORING has been enthusiastically received by Flooring Contractors, Builders and Architects due to the many added Quality Features, and because it is manufactured from the finest quality Appalachian Oak and Hard Maple Lumber, scientifically kiln dried and carefully milled and graded. In spite of all the quality features manufactured into HARRIS BRAND FLOORING, it costs no more than inferior and unbranded flooring.

The name HARRIS is cut into the back of each piece of T. & G. Strip Flooring at the time of manufacture for proper identification and your protection. Flooring purchasers find it advantageous to specify HARRIS BRAND FLOORING because of the value received grade for grade. HARRIS BRAND FLOORING is a permanent investment in satisfaction. Complete stocks are carried at strategic points throughout the country for prompt and economical shipment.

A COMPLETE LINE OF FLOORING AND FLOORING SPECIALTIES

"The Harris Line"

NOFMA CERTIFIED OAK FLOORS

- 25/32-in. Oak Flooring (tongued and grooved).
- 1/2-in. Oak Flooring (tongued and grooved).
- 3/8-in. Oak Flooring (tongued and grooved).
- 5/16-in. Oak Strips (square edged).
- 25/32-in. Oak, Maple, Beech and Walnut Parquetry.
- 5/16-in. Oak, Maple, Beech and Walnut Parquetry.
- 25/32-in. Hard Maple Flooring (tongued and grooved).
- 25/32-in. Beech Flooring (tongued and grooved).
- 25/32-in. RiBac Colonial Plank Flooring* (4 to 8 in. wide).
- 25/32-in. Solid Colonial Plank Flooring* (4 to 8 in. wide).
- 5/16-in. Solid Colonial Plank Flooring* (4 to 8 in. wide).
- Diamond Blocks; Border Lines; Hardwood Specialties.
- Old English (Dark Fumed) Oak Flooring and Lumber.
- Stone Pattern Flooring.*

*Oak, Hard Maple, Beech, Walnut and Ash.

"HARRIS BRAND FLOORING" is graded according to the Approved Rules and Regulations of the National Oak Flooring Manufacturers' Assn., and the Maple Flooring Manufacturers' Assn. For their catalogs, see File Index

HARRIS RiBac COLONIAL PLANK FLOORING

(RiBac (Trade Mark) Patent No. 1801093

HARRIS RiBac Colonial Plank Flooring consists of wood ribs, or splines, inserted and securely glued in dovetail grooves in the *back* of the plank at 8-in. intervals, at right angles to the grain of the flooring and so milled as to form an integral part of the tongue on one side and the groove on the other. Channels are cut parallel with the grain into the back of the plank, tending to equalize any absorption of moisture.

For best results, RiBac Planks should be nailed through the ribs, which are spaced 8 in. apart with the first and last rib 4 in. from their respective ends, so there will be a minimum amount of waste when laid on beams that are on 16-in. centers.

This scientific method of construction adequately reinforces the individual plank and the entire floor and provides, as well, resistance to atmospheric changes. RiBac Planks are more practical than regular solid planks and more economical than laminated plank construction. There is no veneer on RiBac planks to peel off.

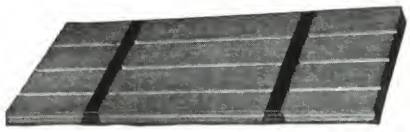
RiBac Plank Flooring is somewhat flexible before installation because of the ribs in the back, thereby enabling this type of plank flooring to be laid with ease in mastic on concrete. This makes it possible for builders of steel houses and other jobs that have a concrete or steel base to use Plank Flooring.

HARRIS RiBac Plank Flooring is produced in widths of 4 to 8 in. and in random lengths, 3 to 14 ft. and is available in the following grades: Clear, Select and Knarly, both Quartered and Plain, in Red and White Oak. It is regularly manufactured with a slight beveled edge, making a shallow V-joint when laid, but can be furnished with the conventional square edge, making a flush joint. Furnished in Oak, Old English (Dark Fumed) Oak, Hard Maple, Walnut, Ash, and other woods. Send for sample and further information.

Plank Floor of Plain White Oak
(Solid or RiBac)

COLONIAL PLANK FLOORING

We also manufacture regular Solid Colonial Plank Flooring, identical in specifications with the RiBac, except there are no ribs in the back of the Plank.



Back of Harris RiBac Showing Scientific Construction

Plank Floor of Knarly White Oak
(Solid or RiBac)

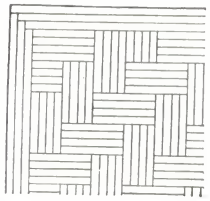
HARRIS PARQUET AND HERRINGBONE

For Nailing or Mastic Installation

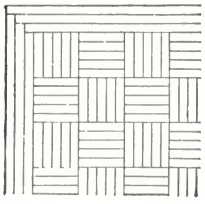
The diagrams below represent a few of the popular designs available in Parquet or Herringbone, to be blind nailed or to be installed in mastic on concrete. The Herringbone is produced from our flatback Straight-Edge Flooring (see illustration on preceding page), assuring perfect matching and consequently faster laying than old style milling, whether nailed or laid in mastic. The under edges of each piece provide an adequate key for holding and taking up the surplus mastic. Herringbone in 25/32-in. thickness is produced in 6¾, 9, 11¼, 13½, 15¾, and 18-in. lengths. In the Clear and Select grades the slats in each layer of the bundle, which make the design, are toned for color.

We also manufacture Parquet Squares, produced in 5/16-in. thickness and glued on heavy paper in 6, 8, 9, 10, and 12-in. squares, to be face nailed. Although designed for new installations, this thickness makes an ideal overlay floor and is used extensively on alteration jobs.

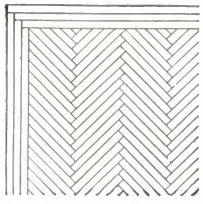
Sketches are shown of our HARRIS DIAMOND PARQUET and STONE PATTERN FLOORING, both distinctive and modern in design. They have an immediate appeal to the discriminating Architect, Home Owner, and Builder. We will gladly send a photograph of these designs, and further information.



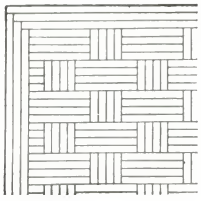
French Herringbone



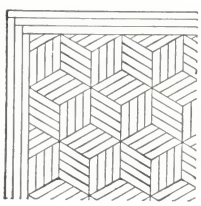
Parquet Squares



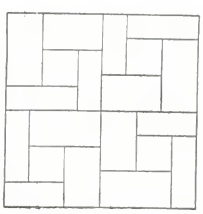
Single Herringbone



Basket Weave



Diamond Parquet



Stone Pattern

11
75

HASKELITE MANUFACTURING CORP.

FLOORING DIVISION

208 West Washington Street, CHICAGO, ILL., U. S. A.

HASKELITE PHEMALOID COMPOUND LUMBER FLOORING

Beautiful in appearance—costs less than other high grade flooring—low installation cost—vermin- and rat-proof—highly resistant to moisture.

Practical for laying on concrete or wood subfloor. Fully tested and approved by major flooring contractors. Protected by Meyercord Patents and Patents Pending.

PARQUET, BASKET WEAVE PATTERN AND PLANK FLOORING

Haskelite Phemaloid Compound Lumber Flooring is available in the following species: Hard Elm, Sycamore, Santa Maria.

SIZES AVAILABLE:

Wood Block: 12″ x 12″ squares.

Parquet and Basket Weave: 6″ and 12″ width units and lengths in multiples thereof, up to eight units.

Planks: 6″ and 12″ widths with six and eight foot lengths.

THICKNESS:

All sizes are factory finished to full ½″.

FINISHES:

Accurately machine sanded. Filler applied on face, back and all edges.

GRADES:

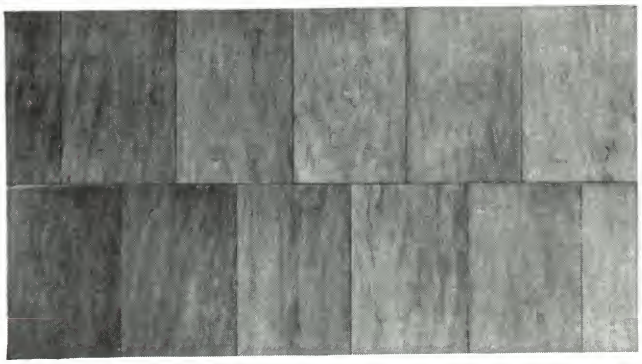
Available in light, medium and dark brown.

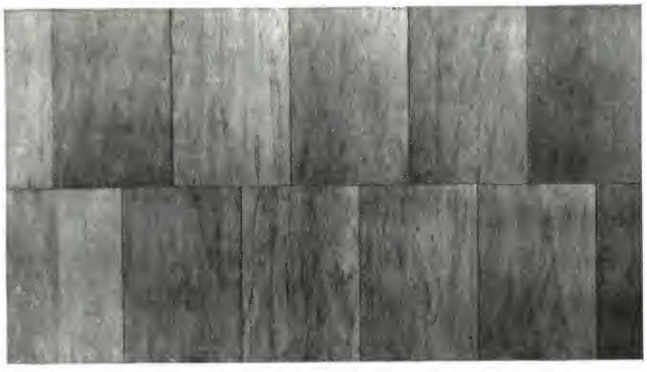
Living Room of Mr. Walter Strong's Home, Winnetka, Ill.
Allen and Webster, Architects

ADVANTAGES OF HASKELITE PHEMALOID COMPOUND LUMBER FLOORING

Haskelite Phemaloid Compound Lumber Flooring successfully limits the effect on floors of varying humidity in the air. For example: Flat cut lumber, 12″ wide, with an increase in moisture content of 6%, will expand across the grain one-quarter of an inch. Under similar conditions, a Haskelite Phemaloid Compound Lumber plank of the same width will expand only one-fiftieth of an inch. Consequently, even a close fitting joint provides ample clearance for expansion when Haskelite Phemaloid Flooring is used.

By producing a 3-ply laminated flooring with the grain of the core running at right angles to the grain of the two face plies, expansion and contraction of the face plies are so nearly eliminated that the warping or swelling effect of varying humidities is no longer a factor. Water-proof phenolic resin glue, (such as Bakelite) provides a bond that is absolutely waterproof and prevents a separation of wood plies regardless of temperature or moisture conditions.





The Above illustration Shows the Figure in Haskelite Santa Maria Flooring, an Extremely Hard Central American Wood

BEAUTY

Within the price range of standard hardwood flooring, no other lumber suitable for finished floors is available in 12″ widths. The large areas of handsome graining permit highly modern effects. Special hand-pegging can be simulated as desired, or narrow planking effects can be routed on face plies.

THE FINEST FLOORS AT MODERATE COST

Haskelite Phemaloid Flooring has no equal for beauty of appearance and convenience in installation yet it costs no more than ordinary floor. Installation costs are low for there is practically no waste.

No doty or defective wood can be used in this flooring since all veneers are rotary cut, a method of production which necessitates the use of new prime logs. Rotary cutting has the further advantage of assuring maximum hardness of the finished material.

LONG LIFE

Floors that are well maintained, seldom require sanding, however, the thickness of the face veneers enable a sander to remove .02 of an inch eight times and still have a perfect surface. On this basis, Haskelite Phemaloid Flooring undergoing severe wear, lasts from 30 to 50 years in perfect condition.

Rodents, vermin and other wood pests are destroyed by the phenolic resin in the glue before they cause damage to this material.

The low co-efficient of expansion in Haskelite Compound Lumber Flooring is especially important to architects and owners who wish to lay wood floors over concrete, for Haskelite Flooring does not creep or warp. Once the mastic bond is set, the flooring remains securely in place. This security is also an important consideration when used over wood subflooring, for the material lies flat and the squeaks caused by warped or buckled floors are satisfactorily eliminated.

CONSTRUCTION

As shown in the diagram, Phemaloid Compound Lumber is made by laminating three $\frac{3}{16}$″ veneers to form one panel. All three veneers are produced under a patented Meyercord drying system whose temperature is 130° Fahrenheit, conserving the natural mineral oils of the wood, thus prolonging the life of the lumber.

Sub Floor Laid 45° Diagonally To Finished Floor
Separate With Layer Of Waterproof Paper

Approved Waterproof Membrane Between Floor And Concrete Slab

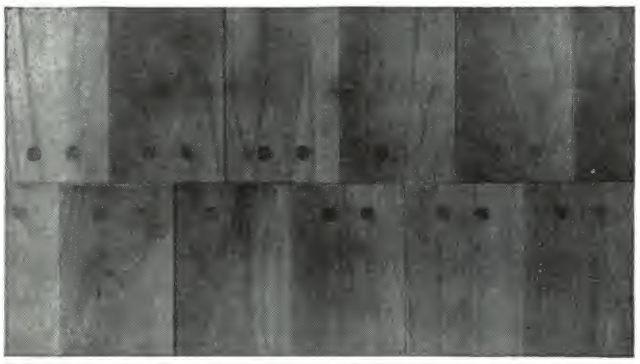
The glue, the strongest bond known, has a Phenol Formaldehyde base. This glue is spread dry between the veneers and under the heat and pressure of an electric press, it liquifies to form an unyielding bond with the wood. As the temperature is increased, the glue returns to a solid state due to a chemical reaction under heat, producing a 3-ply panel that cannot be loosened even by long immersion in boiling water.

For flooring laid over wood or concrete, a tongue and groove joint is provided as shown and the pieces put down in accordance with standard flooring practice. (For specifications, consult the Flooring Division, Haskelite Manufacturing Corporation).

Because this material is laminated with the grain of the core running at right angles with the face veneers, accurate nailing is simplified; there is small chance of the wood of the tongue splitting when the nails are driven through two plies.

For laying in mastic, the tongue and groove forms a secure close fitting joint under all humidity and temperature conditions. This eliminates all danger of the mastic working up between the blocks or planks.

All edges of Phemaloid Compound Lumber Flooring have a slight chamfer. This construction assures accurate definition of the flooring for beauty of appearance. A smooth level floor joint is assured by the tongue and groove which is machine cut to exact measurements. Where an appearance of narrower widths is desired a chamfer may be routed on the face veneer as required.



The Appearance of the Elm Grain Make This Product Ideal for Every Type of Parquet or Plank Flooring

HOLT HARDWOOD CO.

Manufacturers of Maple, Beech, Birch and Wisconsin Oak Flooring

OCONTO, WISCONSIN

HOLT FLOORING FOR RESIDENTIAL, PUBLIC BUILDING, OR COMMERCIAL USE

Products

We manufacture flooring of Maple, Beech, Birch and Wisconsin Oak from the finest quality thoroughly kiln dried wood in strip, herringbone and assembled block form.

Any of these can be furnished stock treated for moisture if desired.

Guarantee

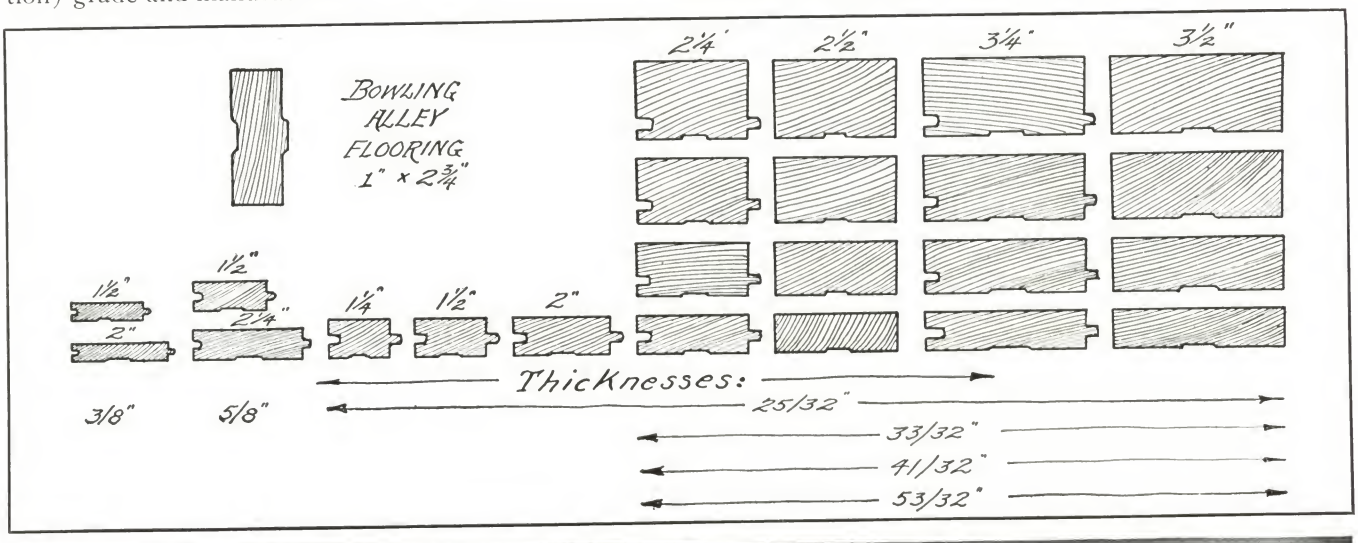
Holt Maple, Beech and Birch Flooring is guaranteed M.F.M.A. (Maple Flooring Manufacturers Association) grade and manufacture.

Over 200,000,000 Feet Installed

Since 1917 over 200,000,000 ft. of Holt Flooring has been installed in a wide variety of buildings throughout the United States and countries throughout the world. These projects comprise class rooms, gymnasiums, auditoriums, offices, factories, newspaper plants, bakeries, residences, etc.

Everywhere it has proved itself to be a durable, quiet, low maintenance cost flooring.

Approved by leading architects. Installed by responsible experienced floor contractors everywhere.



Holt Flooring in the Recreation Building of the Edison Institute Schools, Dearborn, Mich.

MAPLE FLOORING MANUFACTURERS ASSN.

332 South Michigan Avenue, CHICAGO, ILL.

NORTHERN HARD MAPLE, BEECH, AND BIRCH FLOORINGS

Standardized, trade-marked and guaranteed as to grade and manufacture.

MFMA TRADEMARK

Slogan

Floor *with* Maple
Beech *or* Birch

GENERAL CHARACTERISTICS

Northern Hard Maple, Beech, and Birch offer a wide range of uses and color possibilities, yet in general characteristics the three are closely kindred woods.

All three are close grained, hard fibered, free from slivering and splintering, and polish under friction in a way which increases their wearing qualities.

All three have natural beauty when given a wax or varnish finish, and are suitable for use in any room of a fine dwelling, as well as for hard industrial service.

All three have a subdued grain pattern, in keeping with the changing taste, which is away from gaudiness in woods.

All three are particularly clean and sanitary, since the closeness of their grain and the smoothness of their surface afford no lodging place for germ-laden dirt.

Once laid a Northern Hard Maple, Beech or Birch floor is like a smooth, one-piece area of hardest wood because each piece is accurately side and end matched.

INDIVIDUAL CHARACTERISTICS

Northern Hard Maple—Is dense, strong, heavy, remarkably hard, supremely durable. The color of the heartwood is brownish, the sapwood is much lighter. The grain is close—sometimes curly or birdseye. Hard Maple has unusual ability to resist pointed pressure without abrasion. It takes a high polish and attractive finishes. Research work has developed heavy duty finishes and transparent stains which produce a colorful finish enhancing the natural beauty of the wood.

Northern Beech and Birch—These woods show slightly more grain pattern than Hard Maple and have more natural color. In physical properties they are close enough to Maple to be frequently used instead of Maple.

BEAUTY

Due to their leadership in wearing qualities, these three woods have sometimes been stressed for service uses, to the exclusion of any consideration of their beauty. And yet no one who has seen the mirrorlike luster of a Hard Maple dance floor can deny that such a floor has beauty.

COLOR POSSIBILITIES

Hard Maple — Shows an attractive golden hue when waxed or varnished—it is literally a "floor of captive sunlight" which mellows and ripens with passing years. The soft luster of natural finished Hard Maple flooring is demonstrated by its appearance in ballrooms, where the cushioning comfort of wood is almost universally preferred.

Research work of the past few years has resulted in the development of improved Acid Stains by which the extremely hard texture of Northern Maple, hitherto impervious to attractive color staining, is made to take a variety of delightful, transparent, permanent color finishes.

The application of these finishes brings out the delicate grain of the wood and enhances the pleasing effect of birdseyes, burls, etc., thus creating a distinctive type of beauty in wood floors.

Beech and Birch—The grain pattern of Beech and Birch, like that of Hard Maple, is a delicate tracery, without fibrous ridges. Beech and Birch take approved stains readily and evenly, so that a floor laid with either of these woods will present an attractive appearance which lasts for years.

In residential buildings, Beech and Birch are often used where dark floors are desired. Their hardness and their susceptibility to staining, places them in a class with Hard Maple for residential purposes.

MFMA GRADING RULES

Northern Hard Maple, Beech, and Birch Floorings are kiln-dried products sold in standard grades, described in accurate detail in a book of Grading Rules which may be had on application to the Association.

The standard lengths, in $\frac{25}{32}$ inch and thicker, are as follows:

MFMA First Grade: 2 to 16 feet, may contain up to 25% of 2 to 3½ feet, inclusive.

MFMA Second Grade: 1½ to 16 feet, may contain up to 40% of 1½ to 3½ feet, inclusive.

MFMA Third Grade: 1 to 16 feet, may contain up to 60% of 1 to 3½ feet, inclusive.

Hard Maple stock is a rigid requirement of the **MFMA** *Grading Rules for Maple flooring. A specification of* **MFMA** *Maple flooring assures a product made from all Hard Maple lumber. Soft Maple (acer saccharinum) flooring or a mixed species of Maple stock cannot wear equally well with all Hard (acer saccharum) Maple flooring.*

A Hard Maple main floor in the predominating store of the Carolinas—where traffic sometimes reaches 21,000 customers in a single day

Gymnasium of Bulkeley High School, Hartford, Conn.—floored with Northern Hard Maple. Frank Irving Cooper Corp., architects

SPECIAL GRADES

MFMA White Clear Northern Hard Maple, selected for color uniformity.

MFMA Brown Clear Northern Hard Maple, selected for color uniformity.

MFMA "Birdseye Figured" Clear Northern Hard Maple is specially selected stock.

MFMA Red Clear Northern Beech and **MFMA** Red Clear Northern Birch, especially selected for color.

STANDARD MEASUREMENT

Flooring ½ inch and thicker, all faces, is measured ¾-inch waste for matching.

Flooring ⅜ inch ($^{11}/_{32}$-inch) thick, all faces, is measured ½-inch waste for matching.

Jointed flooring, all thicknesses and faces, is measured ½-inch waste.

KILN DRYING

Flooring shall not be considered of standard grade unless the lumber from which the flooring is manufactured has been properly kiln dried.

END MATCHING

All flooring shall be end matched unless otherwise specified.

CUSTOM IN BUNDLING

It is the custom in bundling flooring to "give and take" (averaging the lengths) by including pieces of flooring up to 6 inches over and 6 inches under the length marked on the bundle, and to include pieces of flooring 3 inches (plus allowance for waste in end-matching) under the minimum lengths specified in the Grading Rules.

STANDARDIZATION

MFMA flooring is made to accurate specifications standardized by the Association. The Association maintains supervision over the products of its members through regular grade inspection at mills and its re-inspection service. Competent inspectors are employed for this purpose.

USES OF THE DIFFERENT GRADES

MFMA First Grade—This grade is the highest standard grade. It makes the most durable and desirable floor for any building, and is particularly suited for fine homes, apartment buildings, churches, clubs, dance floors, gymnasiums, hospitals, hotels, office buildings, public buildings, roller skating rinks, schools, stores and other buildings, where fine appearance as well as wear is desired.

MFMA Second Grade—This grade is practically as serviceable as First Grade and can be used in the same type of buildings as First, if the slight imperfections permitted under the rules are not objectionable. Such imperfections, it will be noted, have an actually pleasing effect when the wood is given a color finish as per standard formulae.

MFMA Third Grade—This grade gives excellent satisfaction in factories, creameries, granaries, mills, warehouses, workshops, or at mines, on farms, etc. It is also used in grill rooms, billiard rooms, dens, or rooms of antique design and decoration, where the desire is for the unusual rather than for the conventional.

USES OF DIFFERENT THICKNESSES

The $^{25}/_{32}$-inch thickness of Hard Maple, Beech or Birch Flooring is the most commonly used for general purposes. The ⅜-inch thickness is very satisfactory for laying over old floors but care should be taken that underfloor is dry, sound and of uniformly even surface.

The $^{33}/_{32}$-inch thickness with its ¼-inch additional wearing surface is recommended when floor is to be subjected to extraordinary strain and wear.

The ½-inch, ⅝-inch, $^{41}/_{32}$-inch and $^{53}/_{32}$-inch thicknesses are manufactured for special purposes and are readily available. Jointed flooring, also called Square Edge flooring, possesses the advantage of easy replacement in industrial floors.

THICKNESSES AND WIDTHS, NORTHERN HARD MAPLE, BEECH AND BIRCH FLOORINGS; MFMA FIRST, SECOND AND THIRD GRADES. TONGUED AND GROOVED STRIP FLOORING

Standard Thickness	Face Widths
$^{25}/_{32}$ in.	1½, 2, 2¼ and 3¼ in.
Special Thicknesses	
$^{33}/_{32}$, $^{41}/_{32}$ and $^{53}/_{32}$ in. ⅜, ½ and ⅝ in.	2, 2¼ and 3¼ in. 1½, 2 and 2¼ in.

Jointed (or Square Edge) Flooring of $^{25}/_{32}$ and $^{33}/_{32}$-in. thicknesses is made in 2½ and 3½-in. faces.

MAPLE, BEECH AND BIRCH TONGUED AND GROOVED FLOORING BLOCKS, TO BE LAID OVER CONCRETE OR WOOD SUBFLOORS IN HERRING-BONE PATTERN, IN SQUARES OR OTHER PATTERNS

Thickness and Face Width	Face Lengths
$^{25}/_{32}$x2¼ in. $^{33}/_{32}$x2¼ in.	6¾, 9, 11¼, 13½, 15¾, 13½ in.

The standard length in popular use is 13½ in.

FABRICATED BLOCKS—SQUARES AND RECTANGLES

	Maple, $^{25}/_{32}$ in. thick	Maple, $^{33}/_{32}$ in. thick	Beech, $^{25}/_{32}$ in. thick
1½-in. strips	7½x7½ in. 9 x9 in.	7½x7½ in.	7½x7½ in. 9 x9 in.
2-in. strips	8x 8 in. 10x10 in.	8x 8 in. 10x10 in.	
2¼-in. strips	6¾x 6¾ in. 9 x 9 in. 11¼x11¼ in.	6¾x 6¾ in. 9 x 9 in. 11¼x11¼ in.	6¾x 6¾ in. 9 x 9 in. 11¼x11¼ in.
1½-in. strips	6 x12 in.	.....	6 x12 in.
2¼-in. strips	6¾x13½ in.	.....	6¾x13½ in.
3¼-in. strips	6½x13 in.		

Flooring the University of Minnesota Indoor Sports Building with 33/32-inch thickness Northern Hard Maple Blocks, bonded in mastic to concrete slab. Clarence H. Johnston, architect

HOW TO LAY MFMA FLOORING

Subfloor—The $^{25}/_{32}$-inch and thicker flooring can be laid directly on the joists or on sleepers embedded in concrete spaced no wider than 16-inch centers, but is more frequently laid on a subfloor.

For best results a subfloor made of softwood boards surfaced on one or two sides is strongly recommended.

These boards should be no wider than 6 inches, nailed ⅛-inch allowance between boards and laid diagonally to the top floor. This permits of the top floor being laid at right angles to joists or sleepers, and the use of the narrower subfloor boards prevents the development of cracks between joints in the top floor due to shrinkage in subfloor boards. It should be securely nailed. It should be dry. A cover of glazed, waterproofed and coated building paper should be laid between subfloor and hardwood floor as a protection against moisture absorption by the top floor.

Top Floor—The top flooring should not be laid until plastering and cement work are thoroughly dried and woodwork and trim are installed. In fact, the laying and finishing of the hardwood floors should be the last operation in connection with the construction of the building. As a final precaution it is strongly recommended that either in summer or winter heat be on at least 10 days before flooring is laid.

After the trim is in place, line up the first course of strips flush with the face of the baseboard which must not extend below the surface of the top floor. Nail the first course directly through that portion to be covered with the quarter round or base shoe. Do not, under any circumstances, lay the flooring tight against studding or walls. Use short piece of flooring to put against end or edge of flooring strip when driving it up.

Laying 42,000 ft. of **MFMA** *First Grade Maple Flooring over a diagonally laid 2-in. softwood subfloor in the State Armory, New Haven, Conn.*

ABRASIVE TESTS OF FLOORING MATERIALS

Tests conducted by the Mellon Institute of Industrial Research show comparative values for wearing qualities of Maple and non-wood materials as indicated in the table below.

The tests were made with a machine which ingeniously brought to bear on the flooring material samples an action similar to that of human foosteps. After a test period of the same duration for each material, the percentage loss by abrasion was determined.

The indentation test reveals hardness, and the abrasive test more particularly the resistance to friction.

Material	Average per cent loss	Indentation test*
Vitreous tile	4.57	0.
Marble	23.18	0.
Maple wood	23.79	0.0
Rubber	20.59	4.0
Linoleum	56.57	13.6
Oxychloride cement	50.10	0.0
Neat portland cement	16.79	0.0
Asphaltic composition	80.11	61.9
Cork tile	45.93	26.7

*Note that Maple was the only wood selected for comparative tests with vitreous tile and marble. It was untreated and without benefit of surface finish.

COMPLETE OUTLINE STANDARD SPECIFICATION FORM FOR LAYING AND FINISHING MFMA NORTHERN HARD MAPLE FLOORING

(Also **MFMA** *Northern Beech and Birch)*

ROUGH CARPENTRY

Sleepers or Nailers—Sleepers under floors shall be of 2 x 3-inch stock, and creosoted. They shall be spaced not more than 16 inches on centers, accurately leveled and anchored to the construction at not more than 24-inch intervals. The space between and beneath the sleepers shall be filled solid with concrete, as specified under "Masonry" subheading of concrete and cement work. (Ground and basement floor slabs excepted.)

Anchors for Wood Sleepers—*(This is optional)*—Anchors for wood sleepers shall be zinc coated and so designed that they cannot pull out after the concrete has set. They shall be of (annealed steel wire), (flat band type not less than 1¼ inch wide) of not lighter than 20-gauge U.S. Standard, metal.

Subfloors—*(Where subfloors are required)*—Directly over the sleepers or nailers, lay in a diagonal direction (1 x 4 S2S& CM) ( ) or (1 x 6 S1S or S2S) ( ) boards securely nailed to bearings with 8d common nails.

Floor Insulation—Lay directly over (subfloor) (sleepers and fill) one layer of glazed, coated and waterproofed building paper in accordance with the manuacturer's specifications.

FINISH CARPENTRY

Finish Floors—*(Outline Specifications)*—All finish wood floors shall be of (Northern Hard Maple) (Northern Beech) (Northern Birch) trademarked **MFMA**, of (thickness, width and grade [tongued and grooved] [jointed] strip flooring), of (give dimensions, etc., of individual blocks or fabricated blocks) in accordance with the current Grading Rules of the Maple Flooring Manufacturers Assn.

All finish strip flooring shall be laid directly over the (joists) (sleepers) (subfloors) (waterproofed paper) and securely nailed to each (joist) (sleeper) bearing. (For installation of blocks see manufacturer's specifications, furnished on application.)

Acclimation—All finish flooring shall not be stored or installed in any part of the building until after the building has been pronounced thoroughly dry by the architect or his authorized agents.

All finish flooring shall be stored in the building for at least three days under proper and protected ventilation. The temperature of the areas in which the finish flooring is to be laid and the room in which it is stored prior to installation shall not be more than 70° F. or less than 50° F.

Sanding—All wood floors shall be sanded with a power driven sander of the type that is approved by the architect. The floors shall first be swept clean and all sanding shall be done with medium coarse sandpaper with the grain, finishing up with No. 00 sandpaper to remove all standing grain or fuzz.

Finish sanding across the strip will not be permitted.

After sanding, this contractor shall sweep all wood floor surfaces to remove all dust.

Floor Protection—This contractor shall protect all finish wood floors with an approved building paper until such time as the floor finishing or painting contractor shall be ready to receive them.

LITERATURE FOR FREE DISTRIBUTION

The following booklets and folders are offered through the office of the Association, and will gladly be mailed on request, free of charge:

"**MFMA** Grading Rules and Standard Specifications, including other data of value to Architects—issued in filing pocket folder of A.I.A. file size" (May, 1935, edition).

"Hard Maple Flooring—illustrative of grades."

"Heavy duty Finishes for Maple Flooring—**MFMA** Approved."

"Grading Rules for **MFMA** Floorings—pocket size."

NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION

EXECUTIVE OFFICES
830 Dermon Building, MEMPHIS, TENN.

Purpose

Exponent of the oak flooring industry of the United States, the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION serves the architectural and building professions as the accredited source for authentic specifications and approved simplified practice in specification writing; technical data, published grades and grading inspection.

Service Available to Architects and Specification Writers

As copyright owner of the industry's Grading Rules and their application, the ASSOCIATION maintains a comprehensive staff of inspectors. In addition to supervising grading at members' plants, these inspectors are available at the point of delivery should re-inspection be requested or when questions arise as to the relation between specifications as written and oak flooring as delivered.

Guaranteed for Grade

All oak flooring produced and shipped by members of the ASSOCIATION is guaranteed for grade, under Association rules, by the individual manufacturer. As stated on the copyrighted NOFMA label attached to the flooring bundles, NOFMA grades meet all requirements of Commercial Standards CS 56-36 as issued by the National Bureau of Standards of the U. S. Department of Commerce. This label, therefore, is the warranty mark of the maker — and the industry—which certifies Pedigreed Oak Flooring.

Architects' Specification Protective Clause

All oak flooring shall bear the copyrighted NOFMA label; shall be delivered to the premises in original, unbroken bundles and shall be according to grading rules and subject to re-inspection service of the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION.

New Finishes

Within recent years new floor finishes have been perfected through collaboration by the ASSOCIATION's Research Department with leading manufacturers of floor finishes. Complete information is included in the ASSOCIATION's literature.

For the protection of client and architect, specify Oak Flooring which bears this Warranty Mark

For Your File 19-E-9

The "Specification Manual for NOFMA Certified Oak Floors" is an authentic reference for AIA File 19-E-9. Now in its Fifth Edition.

This practical book serves as a Master Work Sheet and may be referred to in architects' specifications, drawings and details; in bids and agreements with subcontractors and general contractors, as Fifth Edition, Data Sheet A-B-C or D, listing special item numbers which shall govern the work. Copies may be obtained on request from the ASSOCIATION at the above address, together with an exhaustive handbook on the Laying, Finishing and Care of NOFMA Oak Floors.

DATA FOR THE SPECIFICATION WRITER
Subfloors—Sleepers—Nailing—Surfacing

(1) Sub-flooring (Under-flooring)

Over Joist Construction

In new buildings it is presumed there will be an under-floor, or "sub-floor," laid over the joists. Sub-flooring should be 1x4 or 1x6-in. sized, No. 1 or No. 2 *Common* grade of ordinary lumber, *and dry*—preferably kiln-dried material—laid diagonally (at 45°) and driven close but not tight. Boards should preferably be square edge and not tongue and groove or shiplap, and never wider than 6 in. Avoid, generally, the use of boards which have been used as forms for concrete work. These may be used only when sound, clean, and free of warps—and must be absolutely dry and extra-nailed. In residential work it will add greatly to the braced strength of a building to reverse the direction of the diagonal under-flooring, running the direction of the upstairs sub-flooring opposite to that downstairs.

(2) Nailing Sub-floors

The boards must be face-nailed, solidly at every bearing, with two 10d nails. All butt joints must rest on bearings. If it does become necessary to use sub-floor boards wider than 6 inches, extra nailing must be employed at every bearing—thus: For 1x8-in. boards use three 10d nails at all bearings. For 1x10-in. boards, use four nails. Under no circumstances must boards be wider than 10 in.

It is a permanent advantage to have Oak Floors laid upon sub-floor.

Plenty of Nailing—Plenty of nailing holds the floors, makes them rigid and prevents the creeping sometimes caused by shrinkage and expansion in sub-floor lumber.

(3) Sub-floors Over Concrete

Sub-floors laid on sleepers may be laid at right angles or diagonally. Sub-flooring when laid over concrete should be spaced ½ in. apart to assist ventilating and drying out the concrete or floor fill—use square edge boards only. Before laying sub-floor or finish floor over sleepers, sweep the top of concrete clean. Do not use water.

(4) Examine the Sub-floor Carefully

Repair any damage done during construction. Drive down any raised nails, and make sure floor is level, dry and clean. Use no water in cleaning.

Note: A sub-floor must be provided in all cases where the oak flooring material is less than $\frac{13}{16}$-in. thickness.

(5) Building Paper

Lay a good quality building paper over the sub-floor—the type known as 15-lb. asphalt-saturated felt, in rolls, and not thin black-sized, red rosin-sized paper or slater's felt—and extended from wall to wall, laid in place as the floor work proceeds, and lapped about 4 in. It is absolutely necessary to use building paper on the first story. It is advisable to use it upstairs as well (and must always be employed over concrete or nailing concrete).

(6) Insulation Over Heating Plant

For rooms directly over heating plant, use double weight building paper (30-lb. asphalt felt), 30-lb. asbestos felt, or standard insulating board about ½ in. thick. This will provide insulation against excessive heat which might otherwise cause cracks in the floor. The insulation can be applied, if required, on the basement ceiling, set in between the floor joists, in new or in old building.

(7) Sleepers (Screeds)

A sub-floor is absolutely essential to satisfactory Oak Floors; when omitted, the risk is entirely that of the owner or contractor. If an under-floor, or sub-floor is to be omitted, and the hardwood flooring nailed directly to wood "sleepers" or "screeds" set in or on the concrete slab, the sleepers should be spaced not more than 12-in. centers. The customary 16 and 20-in. spacing of sleepers is not recommended as good practice. Sleepers closely spaced, as above specified, compel close nailing, and that is what is needed to get a fine floor.

When a sub-floor is to be installed over a concrete slab, the sleepers may then be spaced 16 or 18-in. centers. Sleepers (or screeds) should be tightened in place. There are various approved methods, such as galvanized metal clips, expansion bolts in lead sleeves, and wire. Fastening and tightening by twisting strong wire around sleepers has proven quite effective and is a simple method often preferred. If beveled sleepers are used, depending on the floor fill to hold them in place, other fastening may be omitted. Sleepers should be wedged up level.

Sleepers, if set in concrete or fill and not otherwise held in place, must have beveled edges. Bevel not required when fasteners are used. A light-weight non-concrete floor fill is required in some cities, others omit fill. Others use cinder, concrete or mortar fill.

(8) Treated Lumber

Sleepers should be of pre-treated lumber, impregnated with an approved wood preservative. If pre-treated sleepers are unavailable, the preservative should be brushed in on all sides and ends, before putting them in place. They should be of a lumber grade equivalent to No. 1 *Common,* 2x4 in. or 2x3 in., and laid with the flat side down.

Note: When a sub-floor or under-floor is to be omitted, and if doubtful as to precise direction that the finish flooring strips are to be laid, lay sleepers at 45° diagonal, permitting finish floor to be laid in either direction.

(9) Floor Furring

Floor furring strips are sometimes used over wood sub-floor construction, when electrical conduits and piping are to be laid on top of the sub-floor. Floor furring strips of the thickness required and 1¾ in. wide, shall be spaced 10-in. centers, tacked to the sub-floor, and laid at right angles to direction of the finished flooring. The latter is nailed through the furring strips, using nails one size larger than those specified in the Nail Schedule.

(10) Floor Ventilation Very Important

Where basements are not provided, adequate provision must be made for the free movement of cross currents of air beneath the building. This circulation may be obtained by providing vents and other openings in the foundation walls.

The total area of vent opening should be at least 1½% of the first floor area and more if possible.

STANDARD OAK FLOORING GRADES

According to the Grading Rules of the National Oak Flooring Manuacturers' Association

Quarter Sawed

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Sap Clear—The face shall be practically free from defects but will admit unlimited bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length.

Bundles to be 2 ft. and up. Average length 4 ft.

Square edge strip flooring is graded as above, but the Clear is bundled 3 ft. and up, average length 6 ft.; Select bundled 3 ft. and up, average length 5 ft.; No. 1 Common bundled 2 ft. and up, average length 4 ft.

Plain Sawed

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to extend 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length.

Bundles to be 2 ft. and up. Average length 4 ft.

No. 1 Common—Shall be of such nature as will make and lay a sound floor without cutting.

Bundles to be 2 ft. and up. Average length 3 ft.

No. 2 Common—May contain defects of all characters, but will lay a serviceable floor.

Bundles to be 1¼ ft. and up. Average length 2½ ft.

OAK FLOORING SIZES, KINDS, AND USES

Appropriate Designation of the Different Grades

Fine residences, apartments, hotels, clubhouses—
CLEAR Quarter Sawed White or Red Oak
SAP CLEAR Quarter Sawed White or Red Oak
CLEAR Plain Sawed White or Red Oak

Fine residences, apartments, hotels, churches, schools, fine stores, clubhouses, public buildings—
CLEAR Plain Sawed White or Red Oak

Apartments and medium price residences, hotels, schools, office buildings, stores, institutions—
SELECT Plain Sawed White or Red Oak

} Suited to "natural" finish or any stained or fumed effects.

Dwellings and tenements, schools, stores, higher class factories, and manufacturing and loft buildings—
No. 1 COMMON Plain Sawed

} Suited to any stained or oiled effect.

Factories, manufacturing and loft buildings, warehouses, cheap tenements—
No. 2 COMMON

} Suited to any oiled effect.

STANDARD COUNTS AND WEIGHTS OF OAK FLOORING

Nominal	Actual	Counted	Weights M. ft.
25/32x2¼ in.	25/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	25/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	25/32x1½ in.	1x2¼ in.	2000 lbs.
⅜x2 in.	11/32x2 in.	1x2½ in.	1000 lbs
⅜x1½ in.	11/32x1½ in.	1x2 in.	1000 lbs
½x2 in.	15/32x2 in.	1x2½ in.	1300 lbs.
½x1½ in.	15/32x1½ in.	1x2 in.	1300 lbs.
5/16x2 in.	5/16x2 in.	face count	1200 lbs.
5/16x1½ in.	5/16x1½ in.	face count	1200 lbs.

Estimating

To compute the quantity of flooring to be ordered for a given room, add to the square foot area of the room as follows:

33⅓% for 25/32x2¼ in.	33⅓% for ⅜x1½ in.
37½% for 25/32x2 in.	25% for ⅜x2 in.
50 % for 25/32x1½ in.	33⅓% for ½x1½ in.
	25% for ½x2 in.

For irregularities caused by closets, bay windows, fireplaces, etc., an additional provision of 5% should be made to cover cutting and fitting.

NAIL SCHEDULE

(Tongue-and-Groove "NOFMA" Oak Flooring Must Be Blind Nailed)

Flooring dimension, in.	Size of nails	Spacing of nails
25/32x2¼	8d light flooring nail—wire nail or steel cut casing nail—(use cut nails when possible)	10 in. apart
25/32x1½	Same nails as above	12 in. apart

Following sizes of oak flooring must always be laid on a sub-floor, and blind nailed:

½ x 2 or ½ x1½	6d bright wire casing nails	10 in. apart
⅜ x 2 or ⅜ x 1½	4d bright wire casing nails	8 in. apart

Square-edge flooring, as follows, to be face-nailed—through top face—instead of blind nailed:

5/16 x 2 or 5/16 x 1½	1⅛-in. barbed wire flooring brad No. 16 heads countersunk and puttied	2 nails every 7 in.

NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION

"NOFMA" FLOORING IN BEECH, BIRCH AND HARD MAPLE

In addition to NOFMA Certified Oak Flooring, members of the NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION also produce Beech (Fagus Grandifolia), Birch (Betula Lutea) and Hard Maple (Acer Saccharum) Flooring.

Identification—The trade name NOFMA applied to Beech, Birch and Hard Maple Flooring signifies uniformity in species, grades, sizes and highest standard of excellence in seasoning and processing.

Technical Bulletin No. 479 **TESTS BY UNITED STATES FOREST PRODUCTS LABORATORY** Issued September, 1935

	Specific gravity			Hardness: Load required to embed a 0.444 inch ball to ½ its diameter. End	Side
Fagus Grandifolia ("NOFMA" Beech)	Green 54% moisture content .56	Air dry 12% moisture content .64	Oven dry .67	1590 lbs.	1300 lbs.
Betula Lutea ("NOFMA" Birch)	Green 67% moisture content .55	Air dry 12% moisture content .62	Oven dry .66	1480 lbs.	1260 lbs.
Acer Saccharum ("NOFMA" Hard Maple)	Green 58% moisture content .56	Air dry 12% moisture content .63	Oven dry .68	1840 lbs.	1450 lbs.

NOFMA Hard Maple, Birch and Beech Flooring have been given parity rating by the Federal Government in MM-L-736 with the same products of the North country.

Emphasis is put upon the fact that while "Local growth conditions do have a marked effect on quality, yet geography in itself is a poor index of growth conditions, and the Forest Products Laboratory in its years of testing and research is inclined to minimize the importance or reliability of adhering strongly to state or regional distinctions."

NOFMA Beech, Birch and Hard Maple Floors have long since demonstrated inherent qualities which readily withstand abuse and are at the same time susceptible of maintenance of the beauty that is characteristic of each.

It is well to consider conclusions of the Forest Products Laboratory or Technical Bulletin No. 479 which states:

"In considering the causes of variation in properties of wood, it may first be noted that many factors affect the growth of trees. Such features of environment as soil, soil moisture, climatic conditions, and competition for light and food, vary widely, within small areas, and are subject to further variation from one period to another during the life of the tree. Their effect is seemingly of greater importance than geographical location within the normal range of a species. This is indicated by the finding of significant differences in strength properties between samples from adjacent areas, among trees grown within a few yards of each other and between the inner and outer portions of the same tree and the observation that samples from widely separated regions may be very similar."

Official Grading Rules

First Grade—Shall have the face practically free of all defects, but the varying natural color of the wood shall not be considered a defect. Standard lengths in all widths in this grade shall be trimmed 2 to 16 ft., as the stock will produce; the proportion of lengths 2 to 3½ ft., inclusive, shall be what the stock will produce up to 25%.

Second Grade—Will admit of tight, sound knots and slight imperfections in dressing, but must lay without waste. Standard lengths in all widths in this grade shall be trimmed 1½ to 16 ft., as the stock will produce; the proportions of lengths 1½ to 3½ ft., inclusive, shall be what the stock will produce up to 40%.

Third Grade—Must be of such character as will lay and give a good serviceable floor. Standard lengths in all widths in this grade shall be trimmed 1 to 16 ft., as the stock will produce; the proportion of lengths 1 to 3½ ft., inclusive, shall be what the stock will produce up to 60%.

Special Grades—First Grade White NOFMA Hard Maple is special stock, selected for uniformity of color. It is almost ivory white and is the finest grade of NOFMA Hard Maple Flooring that can be produced.

First Grade Red NOFMA Beech and NOFMA Birch are special grades produced from all red-faced stock, and are specially selected for color. The color is rich, being a soft tint which lends to these two woods an individuality found in no other species.

Inspection

Integrity of inspection, correct seasoning, manufacture and grades essential to the protection of the owner, architect and contractor, is maintained by NOFMA staff inspectors, supervising at point of production.

STANDARD SIZES, COUNTS AND WEIGHTS

Nominal	Actual	Counted	Weights M ft.
25/32x3¼ in.	23/32x3¼ in.	1x4 in.	2250 lbs.
25/32x2¼ in.	23/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	23/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	23/32x1½ in.	1x2¼ in.	2000 lbs.
⅞x2 in.	¾x2 in.	1x2½ in.	1000 lbs.
⅞x1½ in.	¾x1½ in.	1x2 in.	1000 lbs.

SPECIAL THICKNESSES

Nominal	Actual	Counted	Weights M ft.
17/16x3¼ in.	33/32x3¼ in.	5/4x4 in.	2400 lbs.
17/16x2¼ in.	33/32x2¼ in.	5/4x3 in.	2250 lbs.
17/16x2 in.	33/32x2 in.	5/4x2¾ in.	2250 lbs.

Above tongued and grooved and end matched.

JOINTED FLOORING—i.e., SQUARE EDGE

Nominal	Actual	Counted	Weights M ft.
25/32x2½ in.	23/32x2½ in.	1x3 in.	2250 lbs.
25/32x3½ in.	23/32x3½ in.	1x4 in.	2400 lbs.
17/16x2½ in.	33/32x2½ in.	5/4x3 in.	2500 lbs.
17/16x3½ in.	33/32x3½ in.	5/4x4 in.	2600 lbs.

Note: NOFMA Beech, Birch and Hard Maple Flooring is bundled by averaging the lengths. A bundle may include pieces from 6 in. under to 6 in. over the nominal length of the bundle. No piece shorter than 9 in. admitted.

The percentages under 4 ft. referred to above apply on total footage in any one shipment of the item.

¾-in. allowance shall be added to the tongue on the end matching when measuring the lineal length of each piece of NOFMA Beech, Birch and Hard Maple Flooring.

Technical Literature

Complete Grading Rules to govern in specification writing and including rules governing *re-inspection* will be mailed on request. Address NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION, Dermon Building, Memphis, Tenn.

NATIONAL WOOD PRODUCTS

FLOORING

FLOORING

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Jackson, Mississippi, Plant

The picture above, taken from an airplane, gives a bird's-eye view of Evans Products plants at Jackson, Miss., where EVANITE, LAMINITE and EVERLEVEL flooring are produced. (1) Plant No. 1; (2) Plant No. 2; (3) Plant No. 3; (4) Cooling Shed; (5) Dry Kilns; (6) Charging Platform; (7) Sorting Chain; (8) Lumber Storage; (9) Power House; (10) Storage Building; (11) Garage; (12) Office; (13) Garage; (14) Cafeteria

NATIONAL WOOD PRODUCTS

Division of

EVANS PRODUCTS COMPANY

Fullerton at Greenfield

Detroit, Michigan

●

NATIONAL Wood Product's treatment of the development of mastic bonded wood flooring as a science requiring highly skilled technical attention from the selection of timber to the actual installation of floors follows the traditional policy of every division of the parent company—thorough testing under every conceivable condition far and beyond those normally experienced in actual usage.

Although wood flooring is almost as old as architecture itself, the scientific advancements and improvements incorporated in modern buildings by the architectural profession, have brought about an entirely different problem in the application of wood floors to these new buildings. By recognizing this flooring problem as a science, the engineers of National Wood Products have made distinct contributions to the industry through the development of new methods starting with the log itself going on down through manufacturing and extending to the installation of the floor.

National Wood Products has at all times given careful attention to the viewpoints and requirements of architects and has maintained these in the foreground so that development work and engineering would be in tune with modern demands.

The long period of intensive experimental work at the company's modern plant in Jackson, Miss., resulted in the perfection, to the last detail, of three types of mastic bonded wood flooring—EVANITE, a wood block flooring of unique design for use where traffic is light but where both appearance and long service are desired; LAMINITE, a fir plywood flooring which we sincerely believe to be the outstanding aristocrat among wood floors; EVERLEVEL, the ideal, heavy-duty flooring, as long-wearing as any end grain floor, as pliable as any block flooring but finer than any comparable floor because of its everlevel strip construction.

No detail has been overlooked which would add to the fineness, superior quality and serviceability of EVANITE, LAMINITE and EVERLEVEL flooring. Each step in the production of these floorings is made under the careful supervision and inspection of experts. It is through the application of proved scientific principles, the cutting, kiln seasoning, precision fashioning, packaging and the exclusive technique used in installation of National Wood Products floors which have made them outstanding in the flooring industry.

Modern Kilns

Partial view of the control room of the dry kilns used for seasoning the lumber that goes into National Wood flooring. These kilns are equipped with the most modern automatic and mechanical devices to assure proper treatment of the lumber before fabrication of the flooring

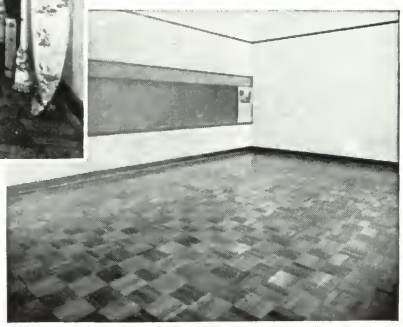
National Wood Products merchandises its flooring through carefully selected distributors with representation in nearly every large city in the United States, in addition to a wide representation by district field men. These forces are augmented by the sales and service organization at the home office, which is always available.

National Wood Products carries out an established policy of engineering its floors from raw material to the customer. The company's policy, however, does not end there. Installations are made through the National Wood Products distributors whose mechanical force is required to follow, even to the most minute detail, the exclusive method of installation laid down by our technical staff.

Recreation Room, Detroit residence
Architect: J. Ivan Dise

Nurses Home in
Massachusetts
Architect: Gordon Roble

Class Room
New Berlin, N. Y., School
Architects: Bley and Lyman



EVANITE

EVANITE is a floor of character, combining all the features inherent in wood flooring and engineered, produced and installed under scientific methods to meet modern building requirements—methods which have resulted from years of experimental work and practical application and experience in the field.

Made from selected oak and beech in the standard grades, the natural beauty of EVANITE is enhanced by its skilful treatment from the time it is cut to its delivery. EVANITE is noted for its exceptional wearing qualities and is distinguished for its stable behavior after installation. By utilizing the near rift method of cutting, EVANITE reduces to a minimum the problem of expansion and contraction, permitting retention of ALL the practical advantages of quarter-sawed lumber without imposing a heavy price penalty on the customer.

The use of a specially designed battery of the latest type of air conditioning kilns for seasoning the lumber for EVANITE contributes in no small degree to the lasting beauty, serviceability and utilitarian features of this flooring. These kilns are equipped with the most modern mechanical and automatic equipment which safeguards against the element of human error and insures the drying of the lumber used in these blocks to the average moisture content best suited for the conditions or locality in which they are to be used.

EVANITE blocks are made up of carefully machined wood strips assembled with waterproof glue under pressure into composite units, the finished thicknesses of which are either 25/32 in. or 33/32 in. and in finished sizes of 9 in. x 9 in. or 6 in. x 12 in. The blocks are flat back (not hollow back) which insures obtaining the maximum bonding of the mastic between the wood floor and the sub floor. Tongues and grooves are provided on the blocks which are made in right and left hand. The tongue and grooves are of the interlocking matched joint type so that when assembled with the adjoining blocks a double tongue and groove is formed around each block together with a continuous mastic groove around the under side of each block, providing a double seal and preventing the mastic from seeping through.

To assure the customer that he will receive EVANITE Wood Block Flooring in the same condition as it was manufactured, regardless of climatic and temperature variations, EVANITE is shipped in a vapor-proof container which affords protection for the contents even when the material is delivered on a job where actual installation work is delayed for one reason or another. The blocks are so packaged that they are protected from the damaging effect of moisture which normally occurs either from dampness of new buildings or weather conditions.

Edison Service Building, Detroit
Architect: John C. Thornton

The methods developed for the installation of EVANITE Wood Block Flooring are outstanding and their use is one of the most important features of the floor. For this reason, National Wood Products insists that it must approve the primer and mastic used under EVANITE and will only approve such materials as it knows, through its own tests, are satisfactory.

One of the most significant developments, and perhaps the one contributing most to the continuing series of successful installations of EVANITE Wood Block Flooring, is the spring expansion joint. This spring expansion joint, originated and engineered by National Wood Products, when installed in accordance with their instructions, eliminates the trouble heretofore experienced with mastic bonded wood flooring due to the normal expansion and contraction of wood. Sketches showing typical methods of application of this spring expansion joint, as well as addi-

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tional information regarding it, are shown on page 5.

EVANITE, developed to conform to the most exacting requirements of architects, has multiple uses. It is this flexibility and variety of uses which materially broaden its field, thus simplifying the flooring problems of architects as well as builders.

The ready adaptability of EVANITE for use in schools and universities, where foot traffic is continuous, is indicated by its widespread acceptance throughout the country. The exclusive method employed in installation of EVANITE flooring in such buildings and the scientific principles embraced in its treatment and preparation for installation combine to establish the superiority of EVANITE where beauty and practicability, from every angle, form the primary demands.

Display and Assembly Hall, Binghamton, N. Y., Gas Company
Architects: Conrad and Cummings

For a number of reasons EVANITE fits in with the modern demands of the modern architect. Of utmost importance is the fact that EVANITE is laid directly on concrete subfloors in a cushion of mastic. This not only makes for resiliency but is easy on the feet and quiets the normal noise of foot traffic through the elimination of hollow spaces under the floor; there are no nails to loosen, therefore no squeaks when walked over; there are no supporting members to work loose, shrink or swell, which also adds to the feature of quietness. EVANITE installation also has important advantages from a hygienic standpoint. It prevents accumulation of foreign matter underneath the floor, minimizes the chance of germs breeding which is a natural hazard, particularly with floors which permit moisture to gather underneath. The value of this feature as a health measure is significant, especially in schools where large groups of students are gathered throughout the day.

The EVANITE method of installation does not permit an air space under the floor, thus acting as a combustion preventative and being, consequently, highly resistant to the dangers of fire.

By installing EVANITE flooring in mastic, directly on concrete, it becomes an integral part of the supporting member and takes on structural strength, eliminating the possibility of the flooring bending or giving as is the case in other methods of construction.

All in all the exclusive EVANITE method of installation materially increases the life of the floor. It is subjected ONLY to the wear of abrasion because of its perfect support underneath.

EVANITE also has proved ideal for installation in homes, public buildings, libraries, museums, office buildings, assembly halls, banks, stores, ballrooms, apartment buildings and industrial plants. And in every installation, from home to factory, EVANITE affords excellent opportunity for unique and artistic design. Further, it can be truthfully said that no other flooring has ever been found which so fully meets every demand as does EVANITE.

Use of EVANITE is not confined to NEW buildings. Even in old structures under process of rejuvenation and modernization EVANITE is peculiarly adaptable. In such installations EVANITE is laid on mastic which is applied to the original base in exactly the same manner as in a new building. Numerous installations of this kind have been made, and the excellent results attained are further proof of the wide field which exists for the use of EVANITE flooring.

Under the National Wood Products process of packaging, the blocks are cartoned immediately as they come off the machines, in rooms where temperatures are carefully regulated. The moisture-proof cartons are delivered to the job with contents in the same condition as when packed.

It is only necessary that the builder and architect have the building in a state which will closely approximate the normal conditions under which it will be used at the time of starting actual installation and that the packages be kept intact. These details combine to permit a perfect installation of a perfect flooring, scientifically preserved under natural conditions.

Men's Furnishing Store, Milwaukee, Wis.

First Presbyterian Church, Ann Arbor, Mich.
Architects: Mayers, Murray and Phillip

Cherry Street School, Johnson City, N. Y.
Architect: Walter H. Whitlock

EVANITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional ¼ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

*
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The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

***

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with (CLEAR) (SELECT) (No. 1 COMMON) grade ($\frac{25}{32}$) ($\frac{33}{32}$) in. thick EVANITE Wood Block Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

****

EVANITE WOOD BLOCK FLOORING

The lumber used in the block shall be kiln dried at the factory to an average moisture content of 7 per cent and at least 90 per cent of it shall have the annual rings at a minimum angle of 30° with the face.

The blocks shall be made up of solid wood strips not less than 1½ in. nor more than 3 in. face width assembled with waterproof glue into composite units $\frac{25}{32}$ in. thick (also available in $\frac{33}{32}$ in. thickness) by 9x9 in. or 6x12 in.

The blocks shall be flat back (not hollow back) and provided with integral tongues and grooves of the interlocking matched joint type so that when assembled with the adjoining blocks, a double tongue and groove is formed around each block together with a continuous mastic groove around the underside of each block.

The blocks shall be packed and shipped in cartons suitably moisture proofed to protect the blocks from the absorption of moisture while in transit or storage prior to installation.

PRIMER—The Primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the wood block flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely and approved by the manufacturer of the wood block flooring.

SPRINGS—The expansion joint springs shall be 1½x8½ in. semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer and performed in such a manner as to give closely fitting joints in the finished work.

Expansion joints not less than 1¼ in. wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practical and then springs, as herein specified, installed on 18-in. centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction. For details see page 5.

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be machine buffed with No. 3 steel wool or hand buffed with No. 00.

The wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

NOTES

**Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

***EVANITE Wood Block Flooring may also be installed over wood subfloors; specifications on request.*

****The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.*

*****EVANITE Wood Block Flooring is produced in $\frac{25}{32}$ in. or $\frac{33}{32}$ in. thickness, red or white oak and beech in the standard grades of: First (Clear); Second (Select) and Third (No. 1 Common).*

Conference Room, Division of Instruction, Board of Education, Detroit
Architect: George L. W. Schultz

Additional copies of this specification will be furnished on request.

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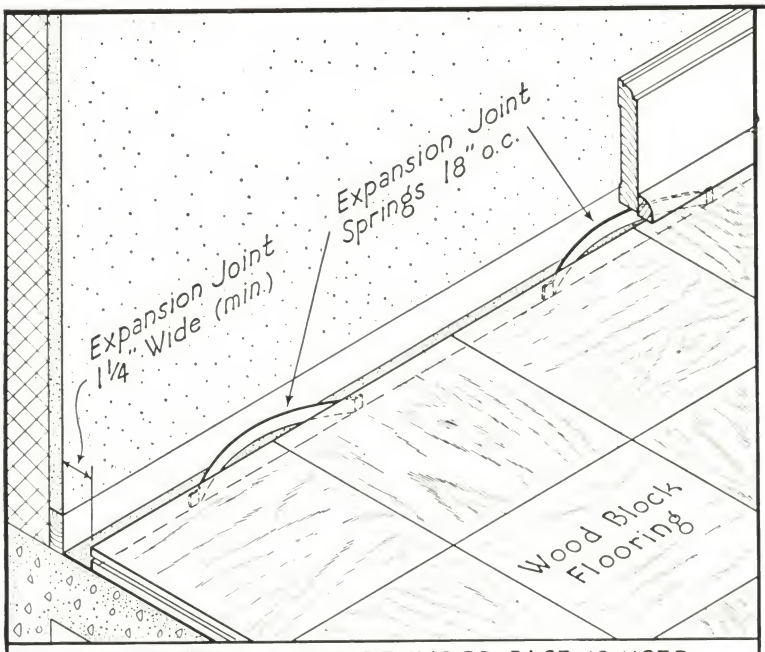


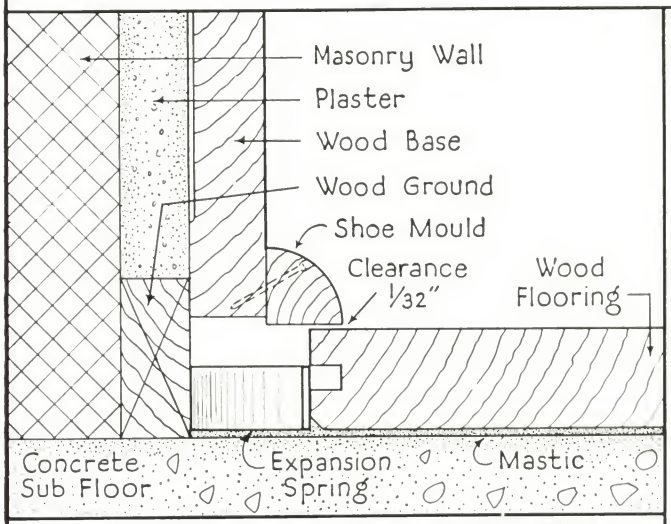
PERSPECTIVE — WHERE WOOD BASE IS USED

SPRING EXPANSION JOINT AND ITS APPLICATION

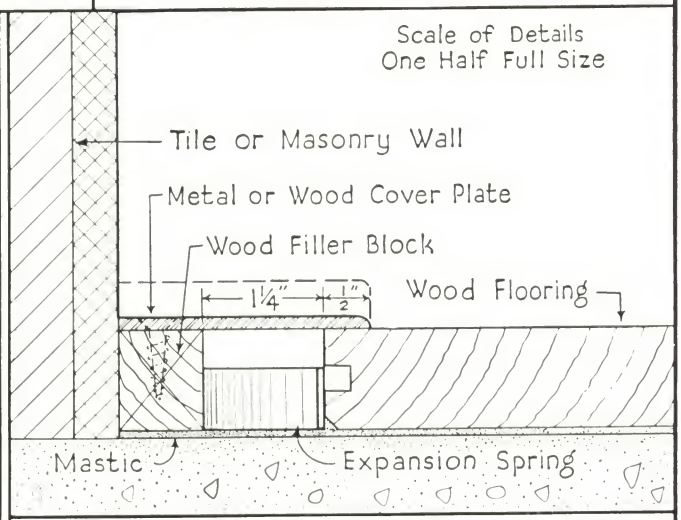
Recognizing the need of additional protection against the normal expansion and contraction of mastic bonded wood floors resulting from atmospheric changes, National Wood Products have engineered and develcped the expansion joint spring (shown at left) which has been in successful use for several years.

This spring, requiring a space 1½ in. wide for its installation, has three unique features:

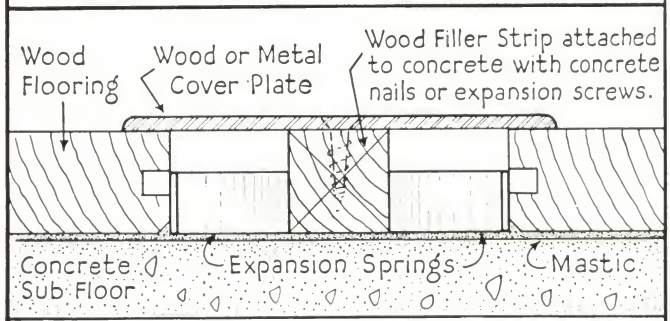
1. The spring can be fully compressed without breaking the mastic bond.
2. As the pressure of expansion is reduced, the spring returns to its original form, gradually forcing the outer rows of block to return to their normal position.
3. Maximum use is made of the expansion space available as the spring compresses to ¼ in.



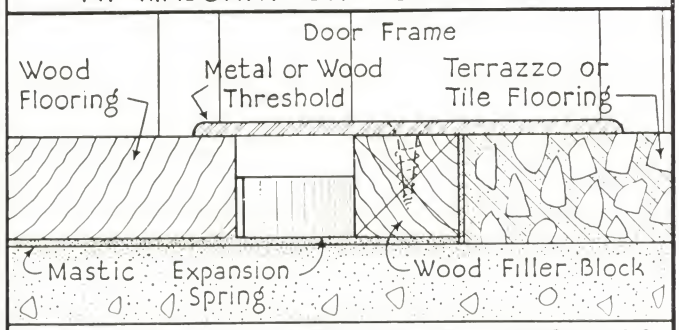
APPLICATION OF EXPANSION JOINT SPRINGS WHERE WOOD BASE & SHOE ARE USED



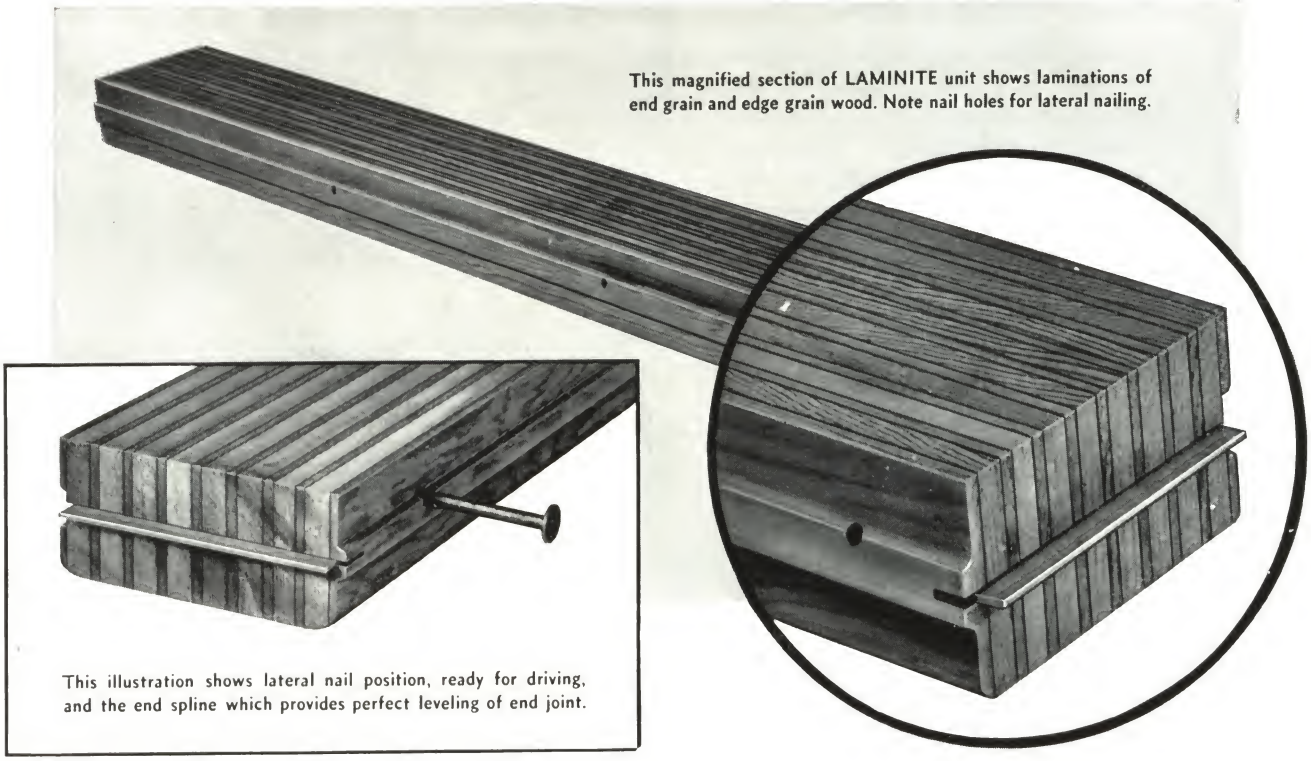
APPLICATION OF EXPANSION JOINT SPRINGS AT MASONRY OR TILE WALLS



EXPANSION JOINT — WHERE ADDITIONAL EXPANSION IS NEEDED FOR LARGE AREAS



EXPANSION JOINT SPRINGS AT THRESHOLDS BETWEEN DIFFERENT FLOOR MATERIALS



This magnified section of LAMINITE unit shows laminations of end grain and edge grain wood. Note nail holes for lateral nailing.

This illustration shows lateral nail position, ready for driving, and the end spline which provides perfect leveling of end joint.

LAMINITE

COMPLETELY engineered and perfected after years of experimental and research work, LAMINITE is the ultimate as an all-purpose flooring. By means of patented construction which resulted from research engineering LAMINITE today occupies a position of leadership in the flooring industry.

LAMINITE installations, made over a period of years in a wide variety of buildings, have proved definitely that it is exclusive—that it is unique—that it stands alone among floors and can not be duplicated.

While the ability of LAMINITE to retain its perfectly flat surface under all conditions without "cupping" is the keynote of this unusual flooring, it also has attained an outstanding reputation for wearing qualities. This holds true whether it is used in gymnasiums, industrial plants or other places requiring high resistance to constant foot traffic and trucking. In addition to these features, LAMINITE flooring also harmonizes with quality appointments and lends an air of distinction to modern buildings.

The principle of plywood is not new, nor is the great wearing quality of end grain a recent discovery. But it was left to LAMINITE to combine the strength and resiliency of plywood construction with the wear-resisting features of end grain wood into a floor that would not warp or cup. This assures a permanent flat surface so essential to the playing areas of athletic competition and facilitating trucking and ease of foot traffic.

In combining these principles a flooring of remarkable appearance was certain to result. The tonal difference of the edge grain laminations and the end grain strips gives a color combination not found in any other flooring.

STRUCTURAL STRENGTH

Because of its laminated construction and lateral nailing, LAMINITE has structural strength approximately 75% as great as regular pine or fir flooring of equivalent thickness. This allows LAMINITE to be laid over sleepers as well as over subfloors. Actual load requirements are met by varying the thickness of units.

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"LAMINITE" CONSTRUCTION

Heavy end grain as well as edge grain laminations are cut from the largest and finest Douglas Fir logs. These laminations after drying thoroughly are put together with waterproof glue to form blanks from which are cut the strips of LAMINITE flooring. The strips are then again normalized in kilns and are run with tongue and groove, drilled for lateral nailing and grooved for metal end splines, assuring a smooth, uniform surface that will not cup or warp.

MINIMUM UNITS TO FLOOR AREA

LAMINITE is milled in 7-foot lengths with the result that but 500 to 600 pieces of LAMINITE are used to cover 1,000 square feet of floor space. From 6 to 23 thousand pieces of end grain flooring are needed to cover the same area.

LATERAL NAILING

Because of the lateral nailing feature of LAMINITE, it forms a virtual "carpet of wood" when laid. Holes are drilled in each unit through which nails are driven in a lateral direction.

WEIGHT ECONOMY

The structural strength of LAMINITE allows it to be used in lesser thickness for any given duty than is possible with other end grain floors. This saving in weight is important.

Nashua, N. H. High School
Architects: Wells, Hudson and Granger

Department Store, Springfield, Mass.

UNIVERSAL APPLICATION

Because of its unique construction LAMINITE may be laid in any manner in which other types of flooring are laid. It may be applied on mastic directly on concrete subfloors, on sleepers laid on the concrete subfloors, or over old wood floors.

SPECIAL USES

In addition to its value as a floor, LAMINITE has successfully met the need of a wall material in those places where a flat, non-cupping surface is required, such as playing walls of squash and handball courts. LAMINITE is also ideal for use in other places where it is desired to apply flexible materials to a supporting base free from ridges which result from "cupping"—a common complaint where conventional materials are employed.

Central School Class Room,
Marcellus, N. Y.
Architect: Carl W. Clark

Handball Court, R.P.I., Troy, N. Y.
Architect: Ralph G. Gulley

Bay City Times Press Room, Bay City, Mich.
Architect: Albert Kahn, Inc.

LAMINITE SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional ¼ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

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The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

***

WOOD FLOORING

The following areas shall be finished with ($1\frac{1}{16}$) (1¼) (1½) (1¾) in. thick Laminite Fir Plywood Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

****

LAMINITE FIR PLYWOOD FLOORING

The wood flooring shall be of Douglas Fir and composed of end grain lamination separated by edge grain binders, all to be glued together with waterproof glue in composite strips 2⅞ in. wide by ($1\frac{1}{16}$) (1¼) (1½) (1¾) in. thick by 7 ft. long.

The surface area of the end grain lamination shall be at least twice that of the edge grain binders. The strips so fabricated shall be kiln dried to a moisture content of 8 per cent, surfaced, provided with integral tongues and grooves and bored for lateral nails not more than 18 in. on center and end grooved for metal spline.

PRIMER—The primer shall be a bituminous product especially prepared for use with the asphalt mastic and approved by the manufacturer of the Laminite Fir Plywood Flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the Laminite Fir Plywood Flooring.

NAILS—The nails used for lateral nailing shall be 4½-in., 10-gauge cement-coated box nails.

SPRINGS—The expansion joint springs shall be 1½x8½ in. semi-elliptical flat steel springs as designed and furnished by the National Wood Products Division of Evans Products Company.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the wood flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laterally nailed on not less than 18 in. centers and laid with the end joints well staggered.

Expansion joints not less than 1¼ in. wide shall be provided at all walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then springs, as herein specified, installed on 18-in. centers in such a manner as to permit movement of the floor when necessary because of expansion or contraction. For details see page 5.

After the flooring is laid, it shall be machine sanded to a smooth, even surface, then brushed clean and given two coats of the penetrating floor finish specified, the last coat to be steel wooled with 00 steel wool.

The Laminite Fir Plywood Flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

Typical Gymnasium Floor in LAMINITE

NOTES

**Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

***Laminite can be installed over wood subfloors or over 1x4 in. strips when desired for gymnasiums; also applied to walls. Typical specifications furnished on request.*

****The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.*

*****Laminite Fir Plywood Flooring is manufactured in the following thicknesses: $1\frac{1}{16}$ in. and 1¼ in. for light traffic; 1½ in. and 1¾ in. for heavy duty service. Also available in thicknesses up to 3½ in. if required for special uses.*

Additional copies of this specification will be furnished on request.

11
79

EVERLEVEL

WHERE extremely heavy traffic is the rule, EVERLEVEL is the answer. For sheer strength and ability to take abuse EVERLEVEL is without equal in its price class. It is a composite end grain flooring built up to form an entire floor secured in a single unit.

Appreciating the qualities of permanency of end grain blocks but recognizing the ordinary troubles inherent in single wood block installations, National Wood Products engineers perfected EVERLEVEL in such a manner as to eliminate the objectionable features without sacrificing any of the good ones.

Applied in resilient mastic, EVERLEVEL is a remarkably quiet floor for shops, receiving rooms, warehouses and other buildings requiring exceptional wearing quality but where natural noise must be deadened. It is particularly desirable for school shops since it eliminates use of sleepers. This is important especially on on-grade areas where sleepers are apt to rot due to possible exposure to moisture. A further advantage of EVERLEVEL in school shops is its cushioning effect on the feet and its minimizing of noise and damage to tools when dropped on the floor.

EVERLEVEL is not just another wood block flooring. Its tee dowel and spline construction is such that it forms a cohesive covering rather than the loose, unconnected mass often found in block installations. The construction, however, is such that the individual blocks are free to move on the dowel and spline if expansion and contraction result from changes in the atmospheric moisture content. This exclusive method employed in EVERLEVEL blocks reduces to a minimum the possibility of splitting or checking.

EVERLEVEL, which is made in thicknesses up to 2½ in., is doweled securely into strips six feet in length with the dowels running the full length of the strip. Each strip is then firmly secured to the adjoining unit by tight fitting, galvanized steel splines laid in continuous strip the full length or width of the floor. These features combine to make EVERLEVEL the only truly "ever level" end grain block floor.

If a tough, long-wearing floor is demanded, EVERLEVEL is the answer.

Ann Arbor Daily News,
Ann Arbor, Mich.
Architect: Albert Kahn, Inc.

Installing EVERLEVEL, new U. S. Post Office Building, Boston

Detroit Bakery Installation

U. S. Post Office, Morgan Park Station, Chicago

EVERLEVEL SPECIFICATION

PREPARATION OF SUB-SURFACES

CONCRETE SUBFLOORS

The concrete subfloor shall be float finished to a smooth and level surface using a reinforced wood screed or leveling darby float not to exceed eight feet in length. Steel troweling is not necessary and shall be avoided.

When finished and set, the concrete subfloor shall be free from sags or high spots, dust, loose sand or other foreign materials and protected against concrete or plaster droppings.

The distance that the concrete subfloor shall be below the required finish floor level is determined by adding $\frac{3}{32}$ in. (mastic) to the thickness of the wood floor specified. For areas requiring 2-ply membrane waterproofing, an additional ¼ in. must be added.

Expansion joints in the concrete slab or subfloor shall not be filled to within one (1 in.) inch of the surface level.

The concrete subfloor shall be dry before any wood flooring is applied and shall be subjected to moisture tests.

*

WATERPROOFING

A 2-ply membrane waterproofing shall be applied to the surface of the concrete subfloors in all areas where the concrete slab is in direct contact with the ground or when the space under the slab cannot be sufficiently ventilated to eliminate moisture condensation.

**

Installation of the membrane waterproofing shall not be made until the building is ready for the wood floors and shall be carried out under the supervision of the wood floor contractor.

WOOD BLOCK FLOORING

The following areas shall be finished with Everlevel End Grain Strip Wood Block Flooring as manufactured by the National Wood Products Division of Evans Products Company and hereinafter specified:

EVERLEVEL END GRAIN STRIP WOOD BLOCK FLOORING

The blocks forming the strips shall be of carefully selected close grain southern yellow pine and show all end grain on the surface.

The surface dimensions of the blocks of which the strips are composed shall be not more than 2x3⅝ in. nor less than 1½x3¼ in.

The blocks shall be dressed square and true to uniform dimensions and shall be assembled in strips at the factory by means of continuous dowels. The strips shall be milled for metal spline for the purpose of securing the adjoining strips together.

The strips shall have a uniform width of not more than 3⅝ in. nor less than 3¼ in. and an average length of (4) (6) ft. The thickness shall be uniform throughout and shall be not less than (1½) (1¾) (2) (2½) in. unless otherwise specified. ***

The flooring shall be kiln dried at the factory to an average moisture content of 8 per cent, and after assembling into strips, given a protective coat of penetrating liquid filler of a type that will not prevent the satisfactory use of the finish coat of sealer.

SPLINE—The spline shall be ½ in. wide x .040 thickness electro galvanized tempered steel strip.

PRIMER—The primer shall be a bituminous product especially prepared for use with the asphalt mastic cement and approved by the manufacturer of the end grain strip wood block flooring.

MASTIC—The mastic shall be a properly prepared asphalt cement which retains its elasticity indefinitely, suitable for hot application and approved by the manufacturer of the end grain strip wood block flooring.

SEALER—The finish material shall be a good quality of penetrating floor sealer as recommended by the manufacturer of the end grain strip wood block flooring and approved by the architect.

INSTALLATION

The flooring shall not be stored or installed in any part of the building until after it is completely enclosed and the concrete and plaster work in such part are completed and that part of the building is thoroughly dry. A temperature of at least 70 degrees F. shall be maintained where wood flooring occurs during the time of laying and after the floors are laid.

The primer shall be applied uniformly to the concrete and well worked in, using sufficient quantity to cover the surface perfectly. The primer shall be allowed to dry before the asphalt mastic cement is applied.

The asphalt mastic cement shall be applied hot on the priming coat in such quantities and in a manner to cause perfect adhesion to the concrete and flooring and shall not be adulterated or thinned in any way.

Laying generally shall be done in accordance with the directions of the flooring manufacturer. The flooring shall be laid to give closely-fitting joints in the finished work and the metal splines shall be continuous across the end joints between the strips.

Expansion Joints from 1 to 2 in., depending on the size of the floor, shall be provided at walls, columns, thresholds and permanent fixtures. The expansion joints shall be left open as long as practicable and then filled with a premoulded type of expansion joint filler or other suitable elastic material.

The surface of the floors in the finished work shall be even, and, if necessary, the floors shall be sanded sufficiently to bring the tops of the blocks and strips flush at the joints. Floors shall be brushed clean and finished with one or more coats of sealer as specified.

The end grain strip wood block flooring shall be guaranteed by the manufacturer against defective material and workmanship for a period of one year.

NOTES

**Old concrete subfloors can be prepared to meet the sub-surface specification by the use of a formula containing Portland Cement, Asphalt Emulsion and sand in the proper ratio. The concrete floor must first be primed.*

***The waterproofing specification is for protection against moisture only and is not intended for areas where water pressure exists.*

****EVERLEVEL is manufactured in the following thicknesses and lengths: 1½ in. and 1¾ in. for light traffic, standard length 4 ft.; 2 in. and 2½ in. for heavy duty service, standard length 6 ft.*

This enlargement shows the tee doweling and continuous steel splines which combine to make EVERLEVEL a truly "ever level" end grain flooring

Additional copies of this specification will be furnished on request.

NATIONAL WOOD PRODUCTS

FLOORING

FLOORING

SECTION 11

CONTINUED ⟶

WOOD-MOSAIC CO., Incorporated

PARKAY Ready-Finished Hardwood Floors

LOUISVILLE, KY.

NEW YORK OFFICE: 60 EAST 42nd STREET

CANADIAN PLANT: Wood-Mosaic, Ltd., WOODSTOCK, ONT.

THE READY-FINISHED HARDWOOD FLOORS THAT COME IN CARTONS

The installation of genuine hardwood floors, completely finished and ready for use, can be realized most quickly and with minimum detail by the use of Parkay. These fine floors are fully covered by patents and are backed by Wood-Mosaic's fifty-five years' experience in producing hardwood floors of nationally known merit. Parkay Floors can be had in either basket-weave pattern of standard 5/16-inch thickness or random-width plank — in oak (light or dark), walnut or teak. Parkay Floors are embedded in a permanent, semi-pliable grill, pre-finished at the factory and supplied in uniformly tight-fitting sections of convenient dimensions.

Walnut PARKAY, Basket-weave Pattern, in La Grange Park, Ill.
Residence built by Wm. Joern & Son, Chicago.

PARKAY Plank Floors Now Available for Laying Directly over Concrete

Now, for the first time in the history of fine hardwood floors, Parkay makes possible the installation of the impressive random-width plank design over concrete *without* the prohibitive cost of drilling, lag screws and expansion bolts and *without* the need of either screeds or mastic. This is proving a decided advantage in new concrete construction where plank floors have been desirable but heretofore impracticable. Parkay random-width planks can, of course, be laid over any other good, sound, level sub-floor. The Parkay plank design in genuine hardwood is made in 1 x 10-foot sections consisting of random-width boards beveled on the edges, realistically plugged and identical in appearance to the standard 13/16-inch plank. It is laid in the same manner as the basket-weave Parkay with Parkay special adhesive.

PARKAY Random-Width Plank
This floor comes in packages of 9 standard sections, 1 by 10 feet each

Oak PARKAY in Williamsburg House, J. L. Hudson store, Detroit, Mich.

PARKAY Basket-Weave Pattern

The original Parkay basket-weave flooring of standard 5/16-inch thickness is in wide use in residences, hotels, apartments, stores, store windows, ballrooms and other public buildings. Both Parkay planks and basket-weave

have the distinct advantage of pre-fabrication and pre-finishing at the factory which assure uniformity in laying and the finest, most durable finish obtainable. Convenient, perfectly finished sample sections of either Parkay design are available for preliminary inspection in the rooms to be floored.

Walnut PARKAY in Show Window of Shop on North Michigan Avenue, Chicago, Ill.

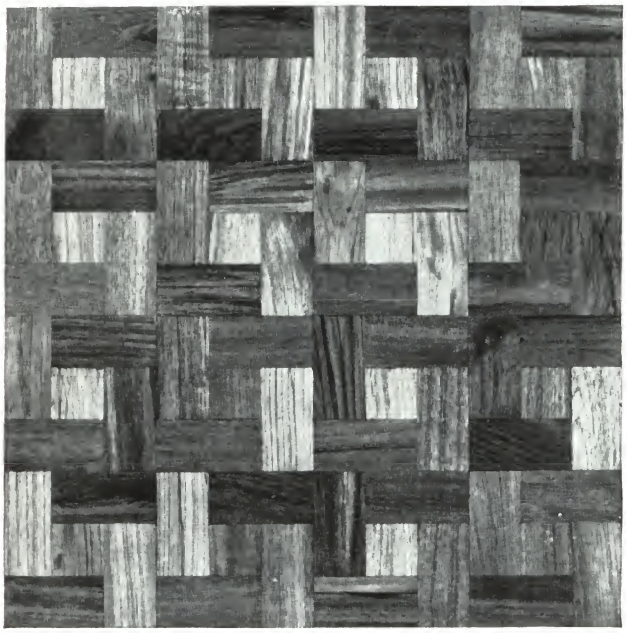
PARKAY Floors Easily Installed

The noise, dust, litter, delays and the unpleasant odors of filler and varnish which usually accompany the laying of regulation hardwood floors are entirely eliminated in the installation of Parkay. Both Parkay basket-weave and Parkay planks are delivered on the job packed in convenient, easily-disposed-of cardboard cartons — 12 sections of 2 x 2-foot basket-weave to a carton; 9 sections of 1 x 10-foot plank. All sections are accurately matched and both designs can be perfectly fitted to any size or shape of room without the waste involved in other types of flooring.

PARKAY Basket-weave of Teak in Chicago Jewelry Store

Other Advantages of PARKAY Floors

Parkay makes available to modest residence or spacious auditorium the rich tones and exquisite texture of genuine hardwood floors at no more than the cost of artificial or imitation floor coverings. In buildings in course of construction, Parkay Floors can be laid after all other structural and installation work has been completed. Thus, the original beauty and fine finish are protected against marring by heavy fixtures, dulling of plaster and spattering of paint. Parkay can be laid over any type of good, sound sub-floor and can be used *immediately* after installation. Being genuine hardwood, Parkay Floors resist wear and the imprinting of heavy furniture. Their fine lustre is easily preserved by dust-mop and an occasional waxing.



Two by 2-foot Section of Walnut Basket-weave PARKAY

Architect's Specifications

General—This branch of the work shall consist of furnishing all labor, materials and equipment necessary to install, in a complete manner, Parkay Floors manufactured by Wood-Mosaic Co., Louisville, Ky., as hereinafter specified.

Flooring Contractor—The contract for installation shall be carried out by an experienced floor-laying contractor authorized to install Parkay Floors and shall be subject to the approval of the architect.

Sub-floor—The contractor shall examine the sub-floor surfaces before starting his work and shall see that they are level, smooth, dry and in a proper condition to receive finished flooring. Any defects in the sub-floor shall be reported to the architect for correction prior to the installation of Parkay.

Baseboards, Plinths, etc.—All baseboards, plinths, etc. shall be held ⅜-inch above the sub-floor to allow Parkay to pass under them.

Installation—Parkay Floors shall be installed after all other work in the area has been completed as they are ready for use immediately upon laying. Parkay lining felt, carrying the approval of Wood-Mosaic Co., shall be securely cemented to the sub-floor and well rolled. The Parkay Floor shall be cemented directly on this felt with special Parkay adhesive and the completed job shall be rubbed lightly with steel wool and waxed. All materials and methods used shall be in accordance with the manufacturer's written instructions.

Finally—All work shall be in strict accordance with the specifications and shall be subject to the approval and acceptance of the architect and owner.

WOOD-MOSAIC CO., Incorporated

FINE HARDWOOD FLOORS IN STANDARD AND SPECIAL DESIGNS

Products, Experience, Co-operation

Hardwood floors of domestic and foreign woods, including authentic period designs, wood blocks laid in mastic for fireproof buildings, parquetry, standard strips and squares, herringbone designs. Wood-Mosaic has been manufacturing fine hardwood floors for fifty-five years. Representative installations may be seen in thousands of residences, public and semi-public buildings throughout the United States and Canada. To the architect, Wood-Mosaic offers its complete facilities for designing floors especially adapted to individual requirements and for selecting reliable floor-laying contractors capable of handling all phases of installation. Photographs and literature describing a wide variety of Wood-Mosaic Flooring are available on request.

United States Supreme Court Building
This, and the other fine wood floors in the United States Supreme Court Building, were made to architect's special designs by Wood-Mosaic

Wood-Mosaic Period Floors

Most of the fine period flooring designs now found in America were introduced by Wood-Mosaic. Principally of English and French origin, these designs were selected by our own staff and represent either adaptations or faithful reproductions of many of the classic European examples.

Wood-Mosaic Gothic Oak of Special Design in Executive Office, Los Angeles Times Building
Over 65,000 feet of Gothic Oak of various patterns are in use in this building

Wood-Mosaic Colonial Plank in Burmah Teak
Available either solid or veneered

Fontainebleau Pattern—This exquisite design appears in the Fontainebleau Palace and other historic buildings in France. It is available in quartered white oak (as in the originals), in walnut, teak or Wood-Mosaic's special seasoned-brown Gothic oak.

Monticello Pattern—A true Georgian design and an exact replica of the parquetry floors in Thomas Jefferson's historic Virginia mansion. Produced in burl or striped walnut, in curly or rift-sawn oak and in many other impressive combinations of woods.

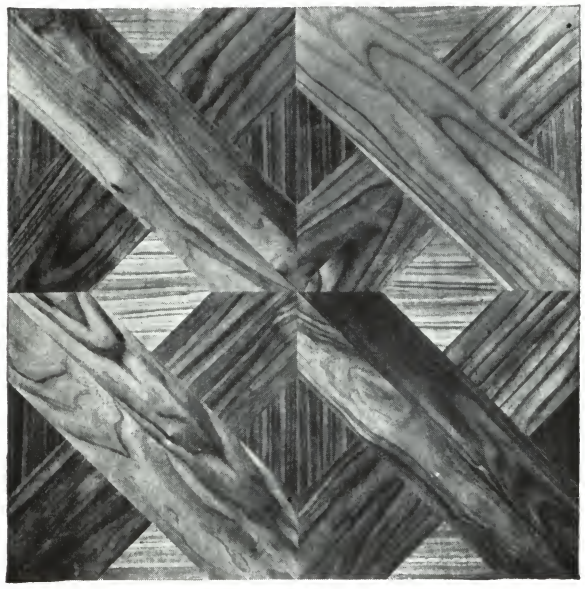
Colonial Decking—These solid board floors are roughcast and of random widths. They are faithful re-creations of the floors in Queen Elizabeth's banquet hall in the castle at Carnarvonshire, Wales. Natural variations in texture and tone have been retained; patches and plugs, with or without crack lines, have been studiously reproduced. Much the same effect is obtained in Wood-Mosaic's *laminated Colonial flooring* made of three-ply quartered or plain white oak with each layer held securely in place by special waterproof hydroplane glue thus insuring a uniformly smooth surface. Also available in walnut, teak and other foreign and domestic woods.

Wood-Mosaic Antique Oak Plank
A somewhat exaggerated but fascinating effect of antiquity

Squares and Herringbone—In addition to the foregoing authentic reproductions, Wood-Mosaic manufactures such exquisite patterns as *Marie Antoinette, Bordeaux, Haddon Hall, French Herringbone*—also (for nailing or laying in mastic directly on concrete) *regular herringbone and squares.*

Mastic Wood Blocks

Wood-Mosaic was pioneer of mastic wood-block flooring in America and manufactures their period designs in the special, fireproof construction required for laying in mastic over concrete as well as for nailing. All basic principles in construction, developed in our own and European experiences and essential to permanently successful installations, are strictly adhered to in manufacture. Wood blocks, for laying *separately,* have flat backs for full-surface bearing on concrete; all are tongued and grooved; all have ample mastic grooves entirely around backs. We shall gladly mail you a copy of our 8½ x 11-inch, 24-page book, "Wood-Mosaic Mastic Wood-Block Flooring,"



Special Design with Flat-grained Walnut Pickets and Quartered Walnut Centers

which lists many outstanding installations and gives complete details of designs, construction and method of laying this space-and-cost-saving type of floor.

Antique Fontainebleau of Mixed Plain and Quartered Oak as Shipped from Factory
Further "antiquing," if desired, may be done by craftsmen when installing

Specifications and Service

Detailed specifications covering every type of Wood-Mosaic Floors, consistent with the specific requirements of each project, will be promptly furnished on request.

THE JENNISON-WRIGHT COMPANY

Manufacturers of Kreolite Wood Block Floors

2480 Broadway, TOLEDO, OHIO

TREATING PLANTS: TOLEDO, OHIO, and GRANITE CITY, ILL.

BRANCH OFFICES

NEW YORK CHICAGO CLEVELAND DETROIT BOSTON PHILADELPHIA ST. LOUIS ALBANY PITTSBURGH, PA.

TORONTO, ONTARIO, CANADA

Products and Services

KREOLITE WOOD BLOCK FLOORS.

Also Creosoted Timbers, Cross Ties, Piling, Creosote Oil, Coal Tar Pitch, Kreolite Termite Exterminator, etc.

THE JENNISON-WRIGHT COMPANY maintains a Construction Department to handle or supervise the installation of Kreolite Wood Block Floors.

Kreolite Wood Block Floors

Kreolite End Grain Floors are constructed of several varieties of wood blocks which provide a specific type of floor for each service condition encountered.

These woods and the method of treatment are as follows:

Class I—Kreolite *Separate* End Grain Yellow Pine Blocks.

Class II—Kreolite *Separate* End Grain Mountain Oak Blocks.

Class III—Kreolite Flexible *Strip* End Grain Yellow Pine or Fir Blocks.

Classes I and II blocks are impregnated under pressure with Kreolite Creosote oil or Kreolite Odorless Antiseptic Mineral oil, as desired.

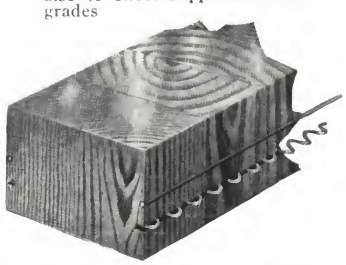
Class III blocks are impregnated with a colorless and odorless preservative that does not stain the wood; they are also impregnated with waterproof Kreolite oil, when desired.

KREOLITE

TRADE-MARK

Kreolite Grooved Block
For dry heated conditions

Kreolite Kountersunk Lug Block
For use under wet conditions where the factor of expansion is to be encountered; also to offset slipperiness on grades



Kreolite End Grain Flexible Strip Wood Block

Specifications for Installing Kreolite Yellow Pine Block Floors—Class I

Blocks—Kreolite Join-Tite Grooved Wood Blocks shall be used wherever the floors are subjected to dry conditions, and Kreolite Kountersunk Lug Wood Blocks where the conditions are wet or considerable moisture is encountered. They shall be —— in. in depth, approximately 3 or 4 in. in width, and may vary from 4 to 8 in. in length.

They shall be manufactured by THE JENNISON-WRIGHT COMPANY of Toledo, Ohio, and laid according to the following specifications, under the direction of the manufacturer's superintendent.

Concrete Foundation—The blocks shall be installed on a concrete base, which shall be finished smooth, exactly the depth below the finished floor level corresponding with the depth of the block used. Care must be taken to see that there are no projections in the concrete that will form an uneven bearing for the blocks.

Kreolite Koncrete Coating—After the concrete has thoroughly dried out, it shall be swept clean and given a thin, even coating of Kreolite Bitumen, not exceeding ⅛ in. in thickness. The coating shall be allowed to harden before laying the blocks and shall not be applied over 20 ft. in advance of the block laying.

Laying the Blocks—Upon the base, as above prepared, the blocks shall be laid tightly together, with the grain vertical; the courses of the blocks shall be kept straight and parallel, starting from one side of the building and carried through to the other side; all joints shall be broken by a lap of at least 2 in. In truckways, and whenever possible, the blocks shall be laid with their length at right angles with the line of traffic.

Expansion Joints—Against the walls on all sides of the floor as well as around all columns and other obstructions, a bituminous expansion joint 1 in. in width shall be formed.

Application of Kreolite Bituminous Filler—After the blocks have been laid in place and brought to as true and level a surface as possible, the joints between the blocks shall be filled with Kreolite Bituminous Filler applied at a temperature of not less than 350° F.

The filler shall be applied by flushing over the surface of the floor, using a rubber-edged squeegee to force it into the joints. Care must be taken to see that the filler penetrates the full depth of the blocks and that the joints are completely filled at the time of application.

Kreolite Mountain Oak Block Floors—Class II

For extremely heavy traffic, aisleways and floors subject to abnormal abuse, we recommend Kreolite Mountain Oak Blocks treated and laid in accordance with the above specifications.

Specifications for Kreolite Flexible Strip End Grain Wood Block Floors—Class III

Kreolite End Grain Strip Wood Block Flooring shall be assembled in strips 2 ft. to 8 ft. long, 1, 1½, 2 or 2½ in. in depth parallel to the grain of the wood, and approximately 3½ in. in width. The flooring shall show all end grain on the top and bottom surfaces. The individual blocks making up the strips shall be manufactured from properly dried Southern Yellow Pine or Fir not over 3x4 in. in cross sections, with each block bonded by galvanized steel wire trusses embedded within the side surfaces of the strips, and milled for tight fitting crimped wire splines. The assembled strips shall be dressed square and true to accurate dimensions on the wearing surface and two sides, and impregnated with a colorless and odorless preservative to protect the floor against absorption of moisture.

When laid, each strip shall be interlocked to the adjoining strip by tight fitting galvanized crimped steel wire splines continuous at least 7 in. across end joints.

The concrete slab shall be smooth, dry and clean when the floor is laid and shall be primed with Kreolite Hercules Priming Oil and given a thin, uniform bedding coat of Kreolite Hercules Bituminous Cement. Expansion joints 1 in. in width shall be formed around all columns and against all walls.

Laying generally shall be in accordance with the instructions of the manufacturers. After the strip flooring is laid, it shall be cleaned free of dirt and given a penetrating coat of Kreolite Sealkote Filler, for industrial purposes; for gymnasiums, auditoriums, etc., a special finish is recommended.

SOUTHERN WOOD PRESERVING COMPANY

ATLANTA, GA.

SALES OFFICES

NEW YORK, N. Y., 10 East 43rd Street
DETROIT, MICH., 1405 National Bank Building
TOLEDO, OHIO, 25 No. Ontario Street
PITTSBURGH, PA., Dollar Savings & Trust Building
PHILADELPHIA, PA., Girard Trust Building
CHARLOTTE, N. C.

TREATING PLANTS: EAST POINT, GA. and CHATTANOOGA, TENN.

Products

CREO-PINE WOOD BLOCK FLOORS.

Also Creo-pine Subflooring, Wood Conduit, Cross Arms, Fence Posts and Poles.

Creo-pine
TRADE NAME
Registered

Uses of Creo-pine Wood Block Floors

Creo-pine floors are used in factories, machine-shops, warehouses, loading platforms and other establishments where durability is an essential factor, and comfort to workmen and consequent increased human efficiency are items of consideration.

Qualifications of a Good Floor

(1) It should withstand surface wear and afford a smooth surface. (2) It should be resilient, free from vibration, non-conductive of heat and non-slippery. (3) It should not dust or crumble. (4) It should be sanitary and easy to clean. (5) It should adapt itself readily to repairs, not only to the surface but to subfloor work. (6) It should be impervious to decay and the action of oils, acids, etc.

Determining Factors of a Good Floor

(1) Blocks shall be made of select Southern yellow pine. (2) They shall be manufactured with mechanical precision to the proper size for service required. (3) They shall be impregnated with creosote oil in accordance with standard specifications. (4) They shall be correctly installed.

Creo-pine Floors Conform to the Ideal

Creo-pine floors meet the above qualifications, as the foregoing determining factors are embodied in each finished floor. The lumber used is the best obtainable Southern yellow pine, thoroughly air seasoned.

Blocks are carefully manufactured to correct size for service required and impregnated with creosote oil by use of the most modern wood preserving equipment. Creosote used is obtained wholly from pure coal tar and is in accordance with standard specifications. The installation is handled by experienced superintendents.

Further information and estimates gladly furnished.

Specifications for Creo-pine Floors

Timber—Timber shall be air seasoned Southern Yellow Pine, square edged and sound, free from bark, loose or rotten knots, wormholes, shakes, check, or other defects detrimental to its strength or durability. It shall average not less than 6 annular rings to the inch measured radially and beginning 2 in. from the heart center.

Size—Blocks shall be truly rectangular, 2½ to 4 in. wide, 5½ to 9 in. long, and 2, 2½ or 3 in. deep (parallel to the fiber). A variation of 1/16 in. shall be allowed in depth, and ⅛ in. in width.

Only one width of blocks shall be used on any single floor.

Preservative—Creosote must be a pure coal tar product obtained entirely from coal gas or coke oven tar and must not contain any admixture of tar oils, petroleum or any other products. It shall be completely liquid at 38° C. and not more than 3% of the water-free oil shall be insoluble in chloroform or benzol. Specific gravity shall not be less than 1.05 and shall not exceed 1.14. When 100 grams of the creosote are placed in a retort and subjected to a distilling test as described in Bulletin No. 96 of the American Railway Engineering and Maintenance of Way Association, amount of distillation shall not exceed the following:

Up to 200° C., no distillate.
Up to 210° C., less than 5%.
Up to 235° C., not more than 25%.
Up to 315° C., not more than 50%.
The oil shall not contain more than 2% of water.

Treatment—Blocks shall be properly treated by pressure-vacuum-empty cell process by a creosoting plant properly equipped for such work, injecting not less than 16 lb. of oil per cu. ft. into blocks with a final retention of 6 to 8 lb.

Foundation—A concrete foundation shall be prepared from 4 to 6 in. thick, depending upon loads to which floor will be subjected, consisting of 1 part cement, 3 parts sand and 6 parts crushed stone or gravel, and brought to a smooth finish sufficiently below grade of floor to provide for depth of blocks.

Concrete must be brought to a smooth and true surface, allowing no coarse aggregate to show, as any unevenness will be apparent in the finished floor.

Bituminous Paint Coat—Upon the thoroughly cleaned and dried concrete base apply a coat of bitumen, spreading same smoothly with squeegees to a uniform thickness of not more than ⅛ in.

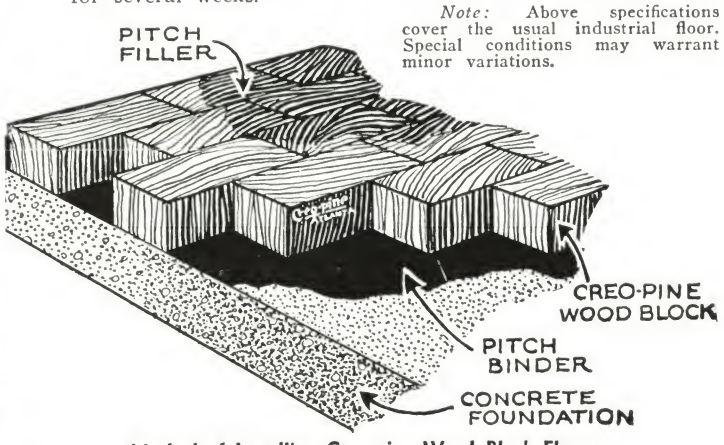
Laying Blocks—Blocks shall be laid on the paint coat in straight parallel lines (at right angles to line of traffic) breaking joints not less than 2 in. and using only whole blocks, except to start and finish courses. Blocks shall be driven tightly together both on sides and ends.

Top Dressing—After blocks have been laid, a top coat of bitumen shall be squeegeed over top of the blocks and well into interstices between the blocks.

Sand Covering—The entire floor shall be covered with a thin coat of fine clean sand which shall be allowed to remain for several weeks.

Note: Above specifications cover the usual industrial floor. Special conditions may warrant minor variations.

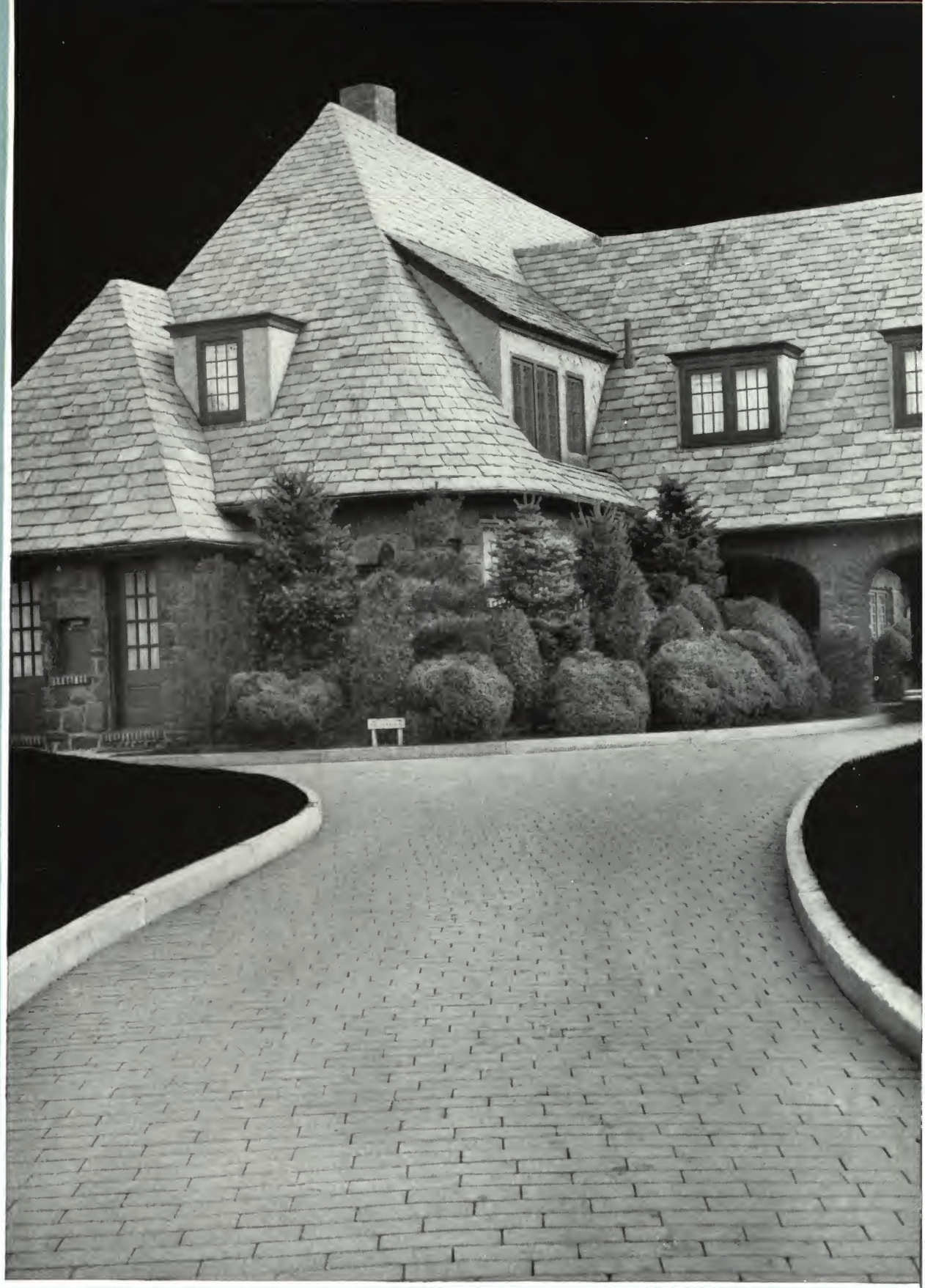
Plant of Illinois Glass Co., Bridgeton, N. J.



Method of Installing Creo-pine Wood Block Floors

MEMORANDA

HASTINGS



ASPHALT BLOCKS

Cover Illustration: Asphalt Block Driveway, Residence, Geo. D. Hofe, South Orange, N.J.

Left: Asphalt Block Non-Skid Construction, Riverside Drive Approach to George Washington Bridge, New York City—6% Grade.

HASTINGS EXPERIENCE AND SERVICE

The Hastings Pavement Company was organized in 1885 for the purpose of producing a unique form of pavement material—the compressed Asphalt Block.

Installations in service today, which were laid in the first decade of the Company's existence, bear witness to the successful accomplishment of that purpose.

To the architect and engineer, is offered the benefit of more than 53 years' experience in the manufacture and improvement of a product recognized as the standard for its kind.

Right: Asphalt Block Pavement, Park Avenue Concourse around Grand Central Station, New York City.

THE HASTINGS PAVEMENT CO., 25 Broad Street, NEW YORK, N. Y.

HASTINGS ASPHALT BLOCKS AND TILES

THE term "Survival Value" as applied to manufactured products has been defined as the capacity to fulfill changed and changing service demands over extended periods of time.

Within the scope of this definition, Hastings Asphalt Blocks have an unquestioned "Survival Value" in the field of paved surfaces. Their inherent durability, moisture-resistance, toughness, non-absorption and smoothness have adapted them to the exacting requirements of modern industry.

Unit manufacture under precise laboratory control assures quality and uniformity of product. Diversity in size and formula permits adaptation to a wide range of installations under varying conditions of usage.

Above: **Veterans' Memorial Bridge, Rochester, New York, Roadway Paved with Hastings Asphalt Blocks.**

Above: **Asphalt Tile Walks Laid 1888 in Flower Gardens, Prospect Park, Brooklyn, N. Y.**

Below: **Asphalt Block Aprons, Floyd Bennett Field, Municipal Airport, Brooklyn, N. Y.**

Above: **Asphalt Block Pavement fronting Columbia University Medical Center, New York City.**

11
83

HASTINGS ASPHALT BLOCK FLOORS

TYPICAL USES

FACTORIES
PIERS
TERMINALS
WAREHOUSES
LOADING PLATFORMS
STABLES

BECAUSE of their toughness and great durability, Hastings Asphalt Blocks have been fittingly called "The Economy Floor."

They embody all essential qualities of the modern industrial floor which must serve not only for manufacturing, assembling, storage, packing and shipping, but must function also as a traffic carrier.

Hastings Asphalt Block Floors are wear-resistant, smooth, non-exuding and odorless — comfortable under foot, non-absorptive and free from ravages of expansion and contraction. They are easily laid, easily taken up and relaid. Their unit construction permits ready sub-surface access, makes maintenance inexpensive and by absorbing movement due to temperature extremes, prevents bulging or cracking.

Right: **Asphalt Block Floor, "Steamer Normandie" pier, French Line, New York City.**

Below: **Asphalt Block Floor, Texas and Pacific Ry. Freight Terminal, Ft. Worth, Tex.**

***Above:* 27-Year-Old Asphalt Block Platform. Arbuckle Bros., Brooklyn, N. Y.**

***Left:* Asphalt Block Floor, Airport Hangar, Drew Field, Tampa, Florida.**

HASTINGS ASPHALT BLOCK ROOFS

ASPHALT Blocks laid on roof decks make roofs usable, at the same time providing protection to the underlying waterproofing and structure.

The high density of Asphalt Block roof decks gives them a load carrying capacity adequate for car parking and storage while their smoothness and comfort under foot adapt them admirably to balconies, promenades and recreation areas.

Asphalt Block roof decks are non-expansive, therefore proof against cracking, waving or blistering. They are fire-resisting, safe and sanitary, free from glare and eye-strain, easily and inexpensively installed, and may be placed at any season of the year.

TYPICAL USES

RECREATIONAL
PARKING
STORAGE
SUN DECKS
PROMENADES
BALCONIES

Left: **Asphalt Block Roof, Cadet Hospital, West Point, N. Y.**

Below: **Asphalt Block Parking Roof, Polsky Department Store, Akron, Ohio.**

Above: **Asphalt Block Roof Promenade, U. S. Bullion Depository, Fort Knox, Ky.**

Right: **Asphalt Block Roof, United States Post Office, Bronx, New York City.**

Above: Asphalt Block Driveway, Residence of Robert F. Morrison, Scarsdale, N. Y.

Below: Asphalt Block Driveway, Residence of Loren N. Wood, Bound Brook, N. J.

ASPHALT BLOCK DRIVEWAYS

DRIVEWAYS of Asphalt Blocks are Driveways of Distinction.

They may be laid in a variety of patterns: basket-weave, spaced joints, in longitudinal or lateral courses, and with skid-proof recessed joints for safety on ramps or in other hazardous locations.

An Asphalt Block Driveway requires no annual "treatments" to restore its surface. It has a built-in resistance to wear without sacrifice of cleanliness, smoothness or sightliness.

Surface adjustments and replacements if necessary, are simple and inexpensive to make, matching the adjoining areas without unsightly or patchy appearance.

TYPICAL USES

RESIDENTIAL
INSTITUTIONAL
INDUSTRIAL
ESTATE
COURTYARD
PUBLIC BUILDINGS

Above: Asphalt Block Driveway laid 1902, Bronx Park Museum, New York City.

Below: Asphalt Block Driveway Entrance to Vassar College, Poughkeepsie, N. Y. Laid 1905.

Above: Asphalt Block Driveway, Residence of T.J.ONeill, Yonkers, N.Y.

ASPHALT BLOCK WATERPROOFING PROTECTION

EFFICIENCY of Waterproofing depends upon its impermeability. Ruptured fabric permits water infiltration with consequent disfigurement and damage to the structure beneath.

It is essential therefore that the delicate fabric be adequately protected if it is to render effective, uninterrupted service.

Hastings "Eightfour" Waterproofing Protection forms a dense, protective shield which cannot creep, shrink, curl or warp. It will not puncture or break under load and its unit construction provides sufficient surface flexibility to prevent expansion heaves or contraction cracks.

TYPICAL USES

BRIDGES
VIADUCTS
PORCHES
VAULTS
LABORATORIES
ROOF DECKS

Above: **Laying Asphalt Block Waterproofing Protection Over Installed Waterproofing Fabric, Hackensack Avenue Bridge of Delaware, Lackawanna and Western Railway.**

Left: **Strips of Waterproofing and Asphalt Block Protection Course partly installed on South Viaduct, Delaware, Lackawanna & Western Railway Terminal Warehouse, Jersey City, N. J.**

Above: **Hexagonal Asphalt Tile Walk, East River Drive, New York City.**

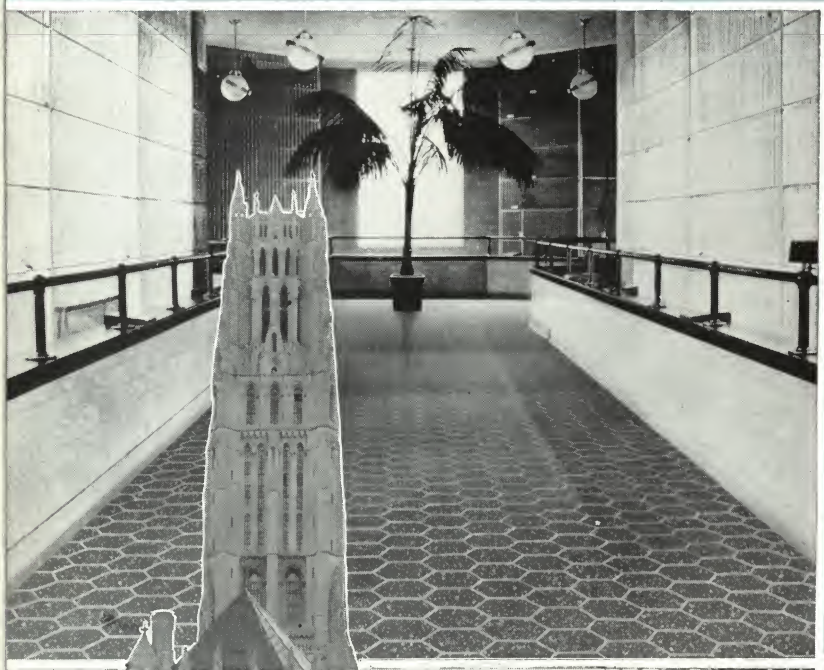
HEXAGONAL ASPHALT TILES

FOR fifty years, Hastings Hexagonal Tiles have served the countless throngs who have found pleasure and relaxation in New York parks and public grounds.

Of soft grey tone color, they blend artistically with their surroundings. Their characteristic shape and size, their surfaces of variegated white and blue stone particles set in a contrasting dark background of asphalt, impart to the landscape a variety unobtainable with conventional flat surfaces.

Retaining beauty and utility with the passing years, Hastings Asphalt Tiles have a special appropriateness wherever landscaping plans call for long-lasting, distinctly different walks.

Below: **Hexagonal Asphalt Tile Corridor, New Menagerie, Central Park, New York City.**



TYPICAL USES

WALKS
CORRIDORS
PLAZAS
PLAYGROUNDS
SWIMMING POOLS
TERRACES
SCHOOL GROUNDS

Below Left: **Hexagonal Asphalt Tile Walk, Riverside Drive, Riverside Baptist Church in background, New York City.**

Below: **Hexagonal Asphalt Tiles on Central Park Marginal Walks, fronting Fifth Avenue, New York City.**

ASPHALT BLOCK PAVEMENTS

HASTINGS Asphalt Blocks have survived a half-century of radically changed traffic conditions. Their resistance to wear and shock which served the horse drawn traffic of an earlier day, satisfy equally the present day concentration of heavy, high speed traffic.

Above all, modern pavements must be safe. Improved car equipment, grade eliminations, easement of curves and other safety measures can not be wholly effective without Safe Pavements.

Asphalt Block Non-Skid Construction renders skid-free and safe, any paved surface where steep grades, curves, poor visibility, or other traffic hazards necessitate precautions against accidents.

Above: **Asphalt Block Roadway, State Highway Bridge over Shark River, Belmar, New Jersey.**

TYPICAL USES

STREETS
ROADS
BRIDGES
AIRPORTS
STATION PLAZAS
INDUSTRIAL YARDS
PARKING LOTS

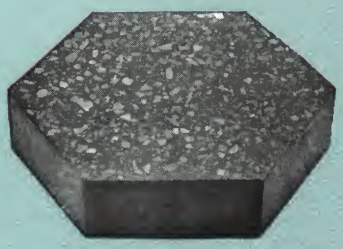
Below: **Asphalt Block Parking Space, New York Central Railroad Station Plaza, Hastings-on-Hudson, N. Y.**

Right: **Asphalt Block Non-Skid Construction, fronting Cornell University Medical Center, New York City.**

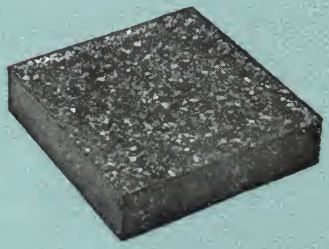
Asphalt Block
5" x 12" x 2½" (deep)

Asphalt Block
5" x 12" x 2" (deep)

"Eightfour" Block
8" x 4" x 1¼" (deep)



Hexagonal Asphalt Tile
—8½" between parallel
sides x 2" (deep)



Square Asphalt Tile
8" x 8" x 2" (deep)

HASTINGS
ASPHALT BLOCKS AND TILES

TECHNICAL DATA

Asphalt Blocks fall into THREE Service Groups as follows:

1. 5" x 12" PAVING AND FLOORING BLOCKS

For heavy duty floors, streets, roads, loading platforms, driveways, bridges, and all areas subjected to hard usage. They are furnished in these sizes: 5″x12″x2″ (deep), 5″x12″x2½″ (deep), 5″x12″x 3″ (deep).

Condition and type of supporting base, kind and volume of traffic or other service are the principal factors in determining the proper depth of blocks for the work to be performed.

2. "EIGHTFOUR" (8"x4") BLOCKS

For upper and lower floors, piers and loading docks where weight and floor thickness are necessary considerations, for roofs, drives, walks, parking areas and protection of waterproofing. Two sizes are available: 8″x4″x1¼″ (deep), 8″x4″x1½″ (deep).

3. ASPHALT TILES

For walks, courts and terraces in parks, cemeteries, schools, play areas, recreation piers, and public grounds. They can be supplied in two shapes and sizes: Hexagonal 8½″ between parallel sides x 2″ (deep), Square 8″x8″x2″ (deep).

Asphalt Blocks and Tiles varying from the above sizes may be furnished for special applications.

ASPHALT BLOCK WEIGHTS

Size Inches	Lbs. Per Block	Lbs. Per Sq. Ft.	Lbs. Per Sq. Yd.	Net Tons Per Thousand Blocks
5x12x2	10.7	25.5	230	5.35
5x12x2½	13.4	32.0	288	6.7
5x12x3	16.1	38.4	346	8.05
8x4x1¼	3.6	16.0	144	1.8
8x4x1½	4.32	19.2	173	2.16
Hexagonal Tiles	10.8	25.2	227	5.4
Square Tiles	11.6	26.0	234	5.8

ASPHALT BLOCK QUANTITIES

Size Inches	*Number of Blocks		Per M Blocks		Per Ton		No. Blocks Min. C/L 60,000 #
	Per Sq. Ft.	Per Sq. Yd.	Sq. Ft.	Sq. Yds.	Sq. Ft.	Sq. Yds.	
5x12x2	2.4	21.5	423	47	78.3	8.7	5607
5x12x2½	2.4	21.5	423	47	62.1	6.9	4478
5x12x3	2.4	21.5	423	47	52.2	5.8	3727
8x4x1¼	4.44	40.0	225	25	125.1	13.9	16670
8x4x1½	4.44	40.0	225	25	104.4	11.6	13889
Hex. Tiles	2.33	21.0	432	48	79.2	8.8	5555
Sq. Tiles	2.24	20.2	441	49	76.5	8.5	5172

*Figures given make allowance for normal wastage in cutting and fitting.

CONDENSED SPECIFICATIONS

ASPHALT BLOCKS: The Blocks shall be composed of crushed, graded trap rock, limestone or equally suitable hard rock, mineral dust and asphaltic cement.

Blocks shall: contain not less than 7% of bitumen; be formed under pressure of not less than 4000 lbs. per sq. in.; show absorption under vacuum test of not more than one-half of one percent by weight; have a specific gravity of not less than 2.40.

ASPHALT BLOCK FLOORS AND PAVEMENTS: Upon the foundation shall be spread a bituminous or sand-cement mortar bed, struck to a smooth, uniform surface ½″ to ¾″ in thickness. Upon this bed the blocks shall be laid tightly together with end joints broken by a 4″ lap. The surface shall be rolled or otherwise adjusted to grade after which asphalt emulsion or other suitable material shall be applied to the joints and a layer of clean fine sand broadcast over the surface.

On screeded foundations, free from surface inequalities, the bed may be dispensed with and the blocks laid directly on the foundation in an asphalt mop coat.

ASPHALT BLOCK AND TILE ROOFS: After the roof deck has been waterproofed, there shall be placed over the waterproofing a course of sand-bituminous mortar struck to a smooth, uniform surface approximately ¾″ in thickness. Upon this bed, the blocks or tiles shall be laid to a uniform pattern with close joints treated with asphalt emulsion or other approved material. Immediately following application of joint material, the surplus remaining on the surface of the blocks shall as far as possible be removed, and a light coating of clean fine sand spread evenly over the finished surface.

ASPHALT BLOCK WATERPROOFING PROTECTION: After the waterproofing fabric has been placed, the blocks shall be firmly set in the final mopping of asphalt over the waterproofing, with tight joints and uniform top surface. The asphalt block protection shall then be given a mop-coat of hot asphalt or asphalt emulsion spread evenly over the surface and flushed into the joints.

ASPHALT BLOCK NON-SKID CONSTRUCTION: Over the foundation shall be spread a bed of sand-cement mortar of an average thickness of not less than ½″. The blocks shall be laid on the bed one row at a time with spacing strips about ⅜″ wide between courses. After laying, the strips shall be removed and the joints filled with free flowing sand-cement grout, which before setting shall be raked to a depth of about ⅜″ leaving recessed lateral joints about ½″ wide and ⅜″ deep.

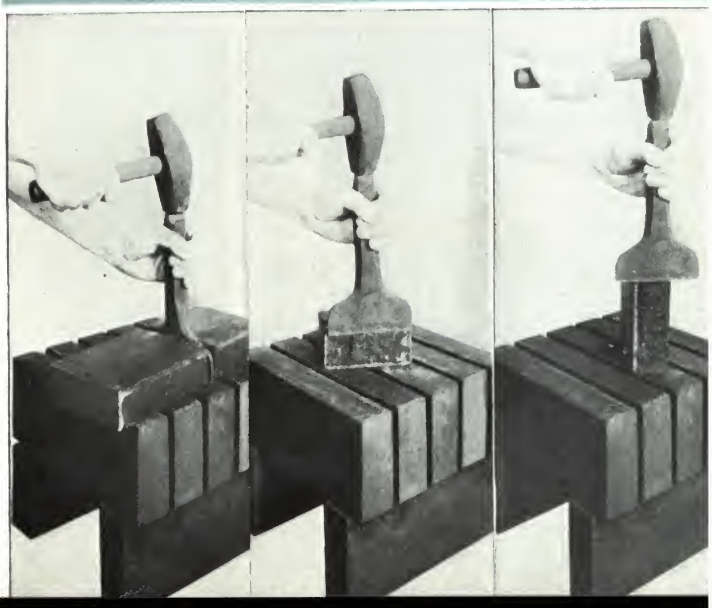
ASPHALT TILE WALKS: The Tiles may be laid on any well compacted base, preferably clean steam cinders or sand and gravel.

Over the foundation shall be spread a bed of sand or lean sand-cement mortar, about 1″ in thickness, struck to uniform top surface. Upon this bed the Tiles shall be laid with close joints or with spaced joints filled with cement grout. Beginning course shall be laid with whole and half tile alternately, and closing course with cut pieces of required size and shape. When laid with close joints, fine sand shall be brushed over the surface until joints are filled.

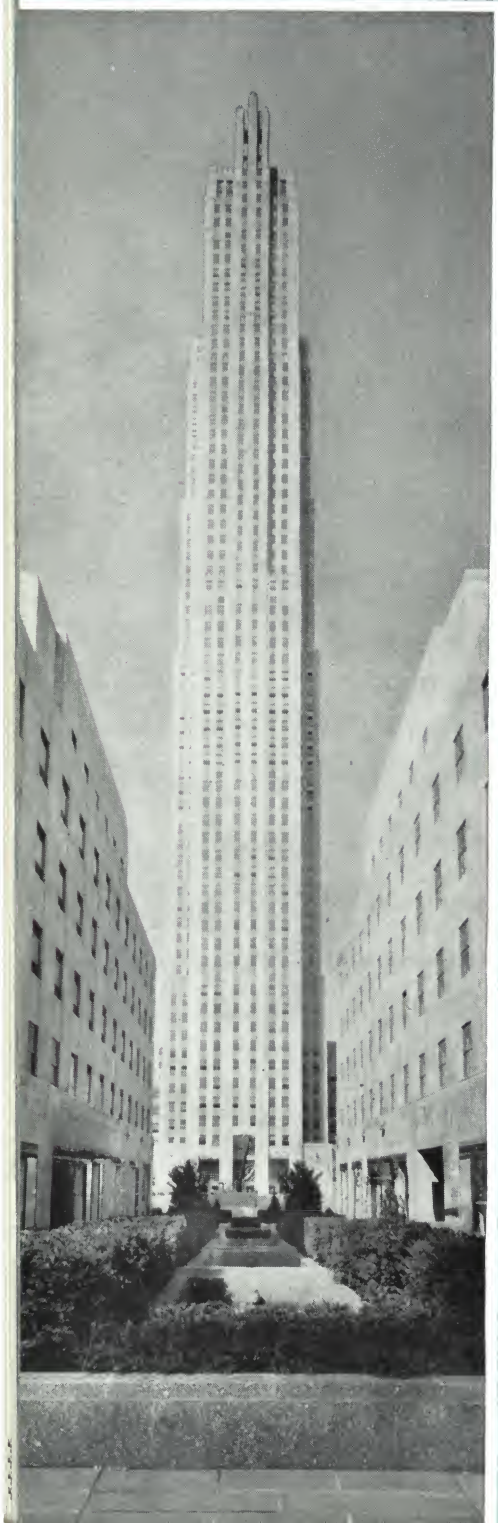
Preparing Bed for Laying Asphalt Blocks

Laying Asphalt Blocks

Cutting Asphalt Blocks



ASPHALT BLOCKS AND TILES



Left Above—Naval Supply Base, Brooklyn, New York, Asphalt Block Floors

Center Above—Texas & Pacific Freight Terminal, Ft. Worth, Texas, Asphalt Block Floors and Shipping Platforms

Right Above—Union Inland Freight Terminal, Port of N. Y. Authority, New York City, Asphalt Block Loading Platforms.

Left—Rockefeller Center, New York City, Asphalt Block Non-Skid Construction Traffic Ramp.

In the foregoing pages, the use of Hastings Asphalt Blocks in various typical installations has been illustrated. There are many other purposes not within the scope of uses enumerated, to which Asphalt Blocks are equally well adapted.

Our engineering staff will be glad to cooperate in developing plans for the application of Hastings Asphalt Blocks not only to those projects where their use would normally be indicated, but also to those projects which involve unusual construction or service features and which, therefore, may require special treatment.

THE HASTINGS PAVEMENT COMPANY

Executive Offices

25 BROAD STREET · · NEW YORK CITY

Plant

HASTINGS-ON-HUDSON, N. Y.

WORTH LUMBER COMPANY

White Building, SEATTLE, WASH.

END GRAIN "WORTHWOOD" FLOORING

For Factory, Shop, Warehouse, Printing Plant, Gymnasium, Armory, Bakery, Post Office

Advantages

The long life and great efficiency of end grain flooring lies in the wear-resisting quality of end grain wood. It is practically everlasting under most severe trucking as proven by street paving blocks and factory flooring during many years. Does not sliver or splinter. In "WORTHWOOD" Flooring the end grain blocks are fabricated into tongue and grooved strips by solid wood splines which keep them permanently firm, smooth and level. It it clean, quiet, warm and resilient. Not affected by heat or cold and not dust producing. Bright color increases visibility. Non-slip. Easy trucking. Preserves sharp edges of tools and does not scratch polished castings. Eliminates space where dampness, mould, or decay might occur.

"WORTHWOOD" is a serviceable, attractive, finished floor, not rough paving blocks. It is recommended as most satisfactory floor for heavy duty in dry interior rooms.

Approved

End Grain "WORTHWOOD" Strip Flooring is approved by the Supervising Architect of the Federal Government, by the Forest Products Laboratory of University of Washington, and by leading Architects throughout the United States. It has been in constant use under heavy trucking and severe service since 1932 with complete satisfaction. 110 Government Buildings have "WORTHWOOD" Flooring where greatest wear resistance is required. It is being used successfully in 40 States.

TYPICAL INSTALLATIONS
Indicating Type of Floor Used

Post Offices (A)

Portland, Me.
New London, Conn.
Philadelphia, Pa.
Richmond, Va.
Lynchburg, Va.
Macon, Ga.
Nashville, Tenn.
Miami, Fla.
Chicago, Ill.
Evanston, Ill.
Peoria, Ill.
Columbus, Ohio
Waterloo, Iowa
Terre Haute, Ind.
Lexington, Ky.
Jackson, Miss.
Dallas, Tex.
Galveston, Tex.
Rochester, Minn.
San Diego, Calif.
Santa Monica, Calif.
San Francisco, Calif.
Tacoma, Wash.
Wenatchee, Wash.
(Over 50 other Post Offices)

School Shops

Pittsburgh, Pa. (C)
San Francisco, Calif. (C)
Syracuse, N. Y. (B)
Long Beach, Calif. (B)
Canton, Ohio (C)
Peoria, Ill. (C)
Waukegan, Ill. (C)
Kewanee, Ill. (B)
Redwood Falls, Minn. (C)
Olympia, Wash. (B)
Ellensburg, Wash. (C)
Grand Forks, N. D. (C)
Delmar, S. C. (C)

Armories (B)

Lewistown, Pa.
Falls City, Neb.
Kearney, Neb.
Centralia, Wash.
Pullman, Wash.
Seattle, Wash.

Athletic Floors

Milwaukee Gymnasium (B)
Peoria Squash Courts (C)
Chicago Athletic Club (A)
Hammond, Ind., 2 Gymnasiums (C)
Women's Athletic Club, Chicago, (A)
Buffalo Gymnasium (A)

Miscellaneous

Union Pacific Mail Terminal, Council Bluffs, Iowa (A)
National Research Station, Washington, D. C. (A)
Firth Sterling Steel Co., McKeesport, Pa. (C)
Pittsburg Glass Co., San Antonio, Tex. (B)
Journal Publishing Co., Providence, R. I. (B)
U. S. Mint, San Francisco, Calif. (A & D)
Federal Highway Shops, Denver, Colo. (B)
Atlas Powder Co., Wilmington, Del. (A)
Northwest Lead Co., Seattle, Wash. (B)
Milwaukee Journal, Milwaukee, Wis. (C)
Woolworth & Co., New York City (B)
Gulf Oil Co., Pittsburgh, Pa. (C)
Naval Training Station, Great Lakes (C)
Federal Building, New York City (A)
Custom House, St. Louis, Mo. (A)
Bureau of Mines, Bartlesville, Okla. (A)
Puget Sound Navy Yard Machine Shop (B)
Naval Reserve Air Port, Glenview, Ill. (C)
Pulaski High School, Milwaukee, Wis. (A)
Memorial Auditorium, Burlington, Iowa (A)
Artillery Proving Grounds, Aberdeen, Md. (A)

Specifications

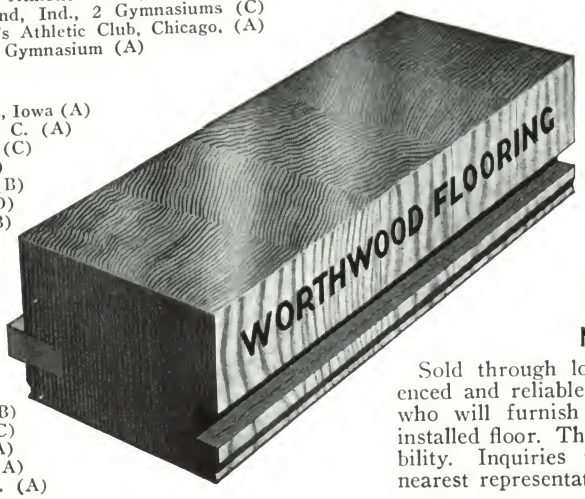
The floors shall be End Grain "WORTHWOOD" Strip Flooring manufactured by Worth Lumber Company, Seattle, Wash.
The face of the floor shall be 100% End Grain.
Each End Grain Block shall extend full depth of flooring.
Material—Kiln dried dense grain Douglas Fir.
Quality—Clear, sound, all heart wood, no sap, and free from all defects on wearing surface.
Fabrication—Securely assembled by continuous solid wood splines to form heavy tongue and groove flooring strips.
Base grooved to care for surplus mastic.
Edges of strips shaved for accurate matching.
Face sanded to uniform thickness.
Lengths—Random 2 to 8 ft. average 6 or longer.
Optional Sizes and ***Recommendations.***
Types "A" and "D" comply with Post Office Specifications.
Types "B" and "C" same quality but lower cost.
2" thick for Gymnasiums and light machine shops.
2½" thick for Armories and heavy industrial buildings.
Type "A"—Strips 2½" thick, 3½" wide.
Composed blocks 1⅝x3½ to 1⅞x3½".
Type "B"—Strips 2½" thick 4½" wide.
Composed blocks 1⅜x4½" to 1⅞x4½".
Type "C"—Strips 2" thick 4½" wide.
Composed blocks 1⅜x4½" to 1⅞x4½".
Type "D"—Strips 2" thick 3½" wide.
Composed blocks 1⅝x3½ to 1⅞x3½".
Treatment at factory (optional) Penetrating, practically colorless and odorless filler to protect against moisture in transit.

Standard Installation

The end grain strips shall be laid in asphaltic mastic on concrete subfloor, with end joints staggered and with 1 to 2-in. expansion strips around all walls and columns. Concrete slab must be smooth, dry and clean. Subfloors directly on the ground or below level must be adequately waterproofed. A good quality asphaltic primer and mastic shall be applied in accordance with manufacturer's instructions. Mastic must not contain water when flooring is laid. The floor, after installation, shall be sanded, if necessary, to make a smooth surface and shall be treated with a penetrating filler of maximum waterproofing character.

Athletic Buildings

For increased *uniform resilience* lay flooring in mastic over mat of cork or insulation board of about 17 or 18-lb. density. For *spanning open spaces* between joists or screeds lay flooring in mastic on Douglas Fir plywood subfloor. (See strength table in Douglas Fir Plywood Association catalog in Sweet's.)



Low Cost "Select" End Grain Flooring

Sound, Serviceable Flooring similar to "WORTHWOOD" but permitting sap, coarse grain, stain, pitch pockets, small tight knots, seasoning checks and slight machine defects.

Minimum Price "Edgeworth" Fir Flooring

1½x5-12 to 40 inch B & Better Edge Grain Fir Matched sides and ends.

Marketing Policy

Sold through long established, thoroughly experienced and reliable flooring firms licensed in 50 cities who will furnish samples and quote on completely installed floor. This assures permanent local responsibility. Inquiries to Seattle office are referred to nearest representative. Samples furnished on request.

INLAND STEEL COMPANY

4-Way Rolled Steel Floor Plate

38 South Dearborn Street, CHICAGO, ILL.

DISTRICT OFFICES

DETROIT, MICH. MILWAUKEE, WIS. KANSAS CITY, MO. ST. LOUIS, MO. ST. PAUL, MINN.

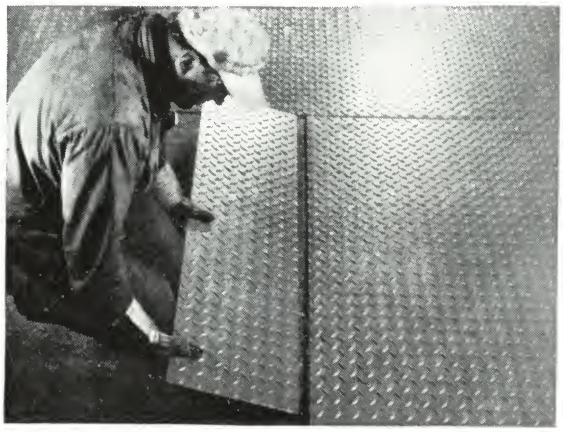
Partial List of Products

SHEETS, STRIP, TIN PLATE, BARS, PLATES, FLOOR PLATES, STRUCTURALS, PILING, RAILS, TRACK ACCESSORIES, REINFORCING BARS, Inland open hearth alloys, such as Inland Hi-Steel (high tensile strength for weight reduction with additional advantage of corrosion resistance) and Inland Copper-Alloy, which resists atmospheric corrosion three to five times longer than ordinary iron or steel. These products are available in practically all rolled forms.

Inland 4-Way Floor Plate

This Inland product is widely accepted as the best steel flooring material for heavy-duty service and for use wherever safe footing and wheel traction are required. It is rolled steel plate with projections that provide safe footing and wheel traction in all directions. This exclusive design was developed by Inland and has become standard in many of the country's largest industrial plants.

Slips and falls are responsible for 20% of all industrial accidents and 25% of all accident compensations according to reports issued by five state labor departments. This hazard is greatly reduced by fireproof, maintenance-free Inland 4-Way Safety Floor Plate.



Safe, Attractive, Fireproof Heavy-Duty Flooring

Variety of Applications

Used structurally or as a floor covering, Inland 4-Way Floor Plate is installed in areas surrounding machines, loading platforms, walkways, aisles, steps, stairs, ramps, fire escapes, power plant floors, truck floors, tread for highway bridges and crossings, or as decks and steps on large machines.

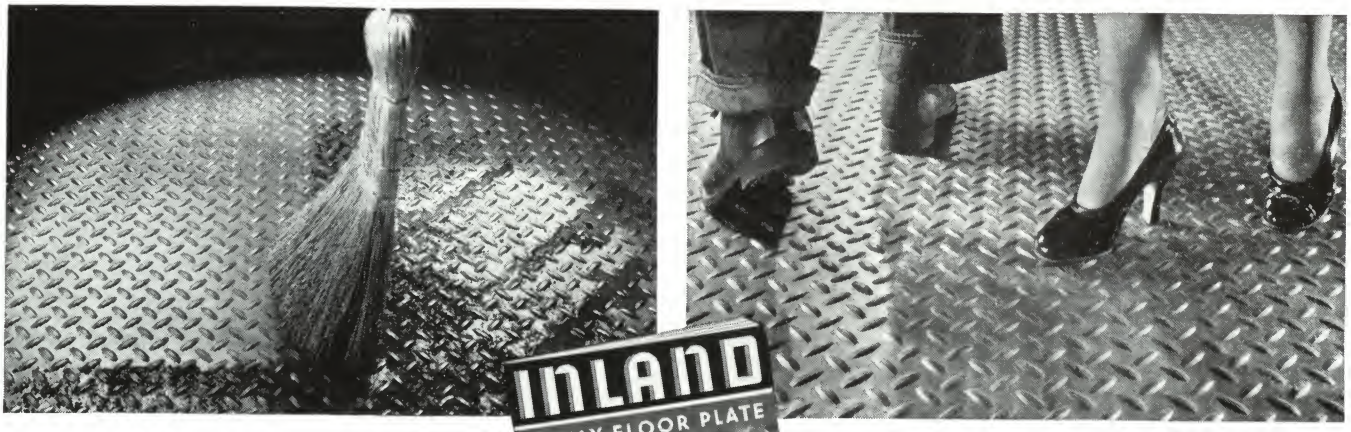
Inland 4-Way Floor Plate can be used where heavy loads and traffic require a safe and long wearing floor surface. Remember rolled steel will never crumble, split, or crack.

Modern Design

Because of its pleasing modern design and finish, architects specify Inland 4-Way Floor Plate for the finest of public buildings, including museums, schools, banks, depots, etc.

4-Way Advantages

(1) Inland 4-Way Floor Plate provides equally safe traction in all directions for feet and wheels.
(2) It is easily kept clean and attractive, drains quickly in all 4 directions and has no pockets to catch or hold dirt.
(3) It is equally stiff in all directions.
(4) It is easily matched, side to end, etc., to make a continuous, attractive pattern without costly waste of material.
(5) It provides a rugged material for long wear, indoors or out, without repairs.
(6) It is modern and attractive in design and available in two sizes of pattern.



Sizes

Inland 4-Way Floor Plate is made in two sizes of pattern. The Standard Pattern (projection 1¼ in. long) is rolled in thicknesses from 3/16 to ¾ in., in widths up to 72 in. and in lengths to 600 in. The Light Pattern (projection ¾ in. long) is rolled in thicknesses from 16-gage to ⅜ in., in widths to 72 in. and in lengths to 600 in.

Stocked by Leading Distributors

Order Inland 4-Way Floor Plate from your distributor or write direct for a 16-page illustrated book on safe floors and methods of installing Inland 4-Way Floor Plate. Inland's experienced engineers and metallurgists will gladly co-operate with you in the selection and use of any rolled steel products.

AMERICAN ABRASIVE METALS CO.

IRVINGTON, NEW JERSEY
NEW YORK OFFICE: 50 CHURCH STREET

National Distributors for

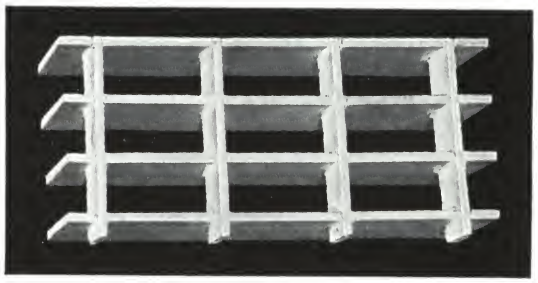
RELIANCE STEEL PRODUCTS COMPANY

RANKIN (PITTSBURGH), PA.

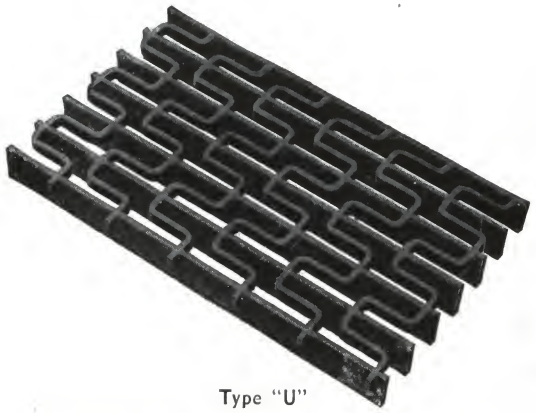
RELIANCE ELECTRO-PRESSURE WELDED GRATINGS, TREADS AND ARMORING

Grating

It is a positive *one-piece* structure. In the RELIANCE welding process, it is impossible for the joints to loosen, because after the metals have been fused under 1000 to 230,000 amperes the 250,000-lb. pressure per cross bar is continued over cold metal to insure positive welds and homogeneous structure—the deep cross bars act as cross braces and insure maximum distribution. This is important *as every piece of grating is subject to a concentrated load in one form or another.* The negative moment is properly taken care of when used as a continuous flooring over three or more supports. There are no acute angles at the joints. This insures maximum ventilation and eliminates the accumulation of dirt in the corners. The sales of gratings and treads during 1937 approached 1,000,000 sq. ft.



Rectangular—"R" Type



Type "U"

Reliance Armoring

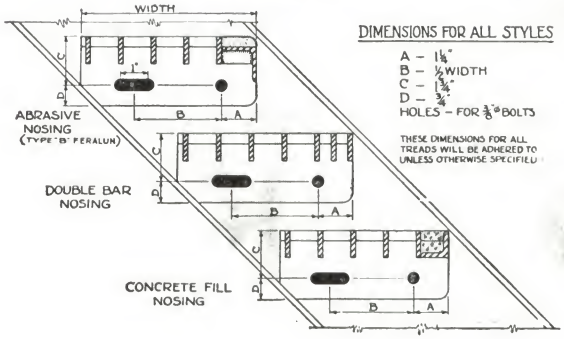
An entirely new design which offers a strong and economical method for floor protection. Send us your problems. Our Engineering Department will cheerfully make definite recommendation.

Reliance Stair Treads

The same superior features of Reliance Electro-Pressure Welded Gratings are available in Reliance Stair Treads. The scientific spacing of cross bars and the fusion formed by the electro-welding process act as non-skid safeguards.

Visible Anti-slip Nosing—The Reliance Stair Tread is the only grating tread manufactured with Alumalun or Feralun abrasive anti-slip nosing—a real anti-slip design in which the edge of each step stands out most clearly. Other designs in Reliance Stair Treads are also available.

Reliance Abrasive Nosing Tread



SAFE-LOAD AND DEFLECTION TABLE FOR GRATING

(Rectangular Design)

For maximum fiber stress of 16,000 lbs. per sq. in.

Size of bearing bar (1" apart), in.		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0
¾ x 3/16	P	500	320	217										
	D	.085	.134	.192										
	W	500	400	325										
	D	.068	.108	.154										
1 x 3/16	P	900	725	600	500	450								
	D	.051	.080	.115	.156	.205								
	W	900	580	400	286	225								
	D	.064	.099	.143	.195	.256								
1¼ x 3/16	P	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
	W	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
1½ x 3/16	P	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
	W	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
1¾ x 3/16	P	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.268	.308	.358	.468	.593
	W	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
2 x 3/16	P	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
	W	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
2¼ x 3/16	P	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460
	W	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574

P = Safe concentrated load in pounds per foot of width.
W = Safe uniform load in pounds per square foot.
D = Deflection in inches.

For ⅛" bearing bar, carrying capacity is two-thirds and deflection four-thirds that of ¼"

For ¼" bearing bar, carrying capacity is four-thirds and deflection three-quarters that of $\frac{3}{16}$"

We *guarantee* that for the same metal and the same size bars, Reliance Grating will have at least as much carrying capacity and no more deflection than any other grating on the market.

The above tables are *extremely conservative* when applied to Reliance Electro-Pressure Welded Grating.

For other gratings or spacings, our Engineers will promptly supply safe load tables, upon request.

Maximum lengths 40 ft. Maximum width 6 ft. Standard widths 3 ft. Reliance Engineers will recommend specific widths for specific jobs.

BLAW-KNOX DIVISION

OF BLAW-KNOX COMPANY

Steel Grating

2041 Farmers Bank Building, PITTSBURGH, PA.

NEW YORK, N. Y., 342 Madison Avenue
CHICAGO, ILL., Peoples Gas Building
PHILADELPHIA, PA., Broad Street Station Building
BIRMINGHAM, ALA., Brown-Marx Building
EXPORT DIVISION: Blaw-Knox International Corp., PITTSBURGH, PA.
LONDON, ENGLAND, Euston Road, LONDON, N.W.-1
PARIS, 8°, FRANCE, 11 Rue La Boëtie

Blaw-Knox Electroforged Steel Grating and Open Flooring

The advantages of actual one-piece construction presented exclusively by Blaw-Knox Electroforged Steel Grating will be especially apparent to those who have used, or are using today, ordinary grating which is mechanically assembled. It is a simple structure, electroforged for strength and permanence, marked by an entire absence of loose parts and characterized by an extremely low maintenance cost.

BLAW-KNOX

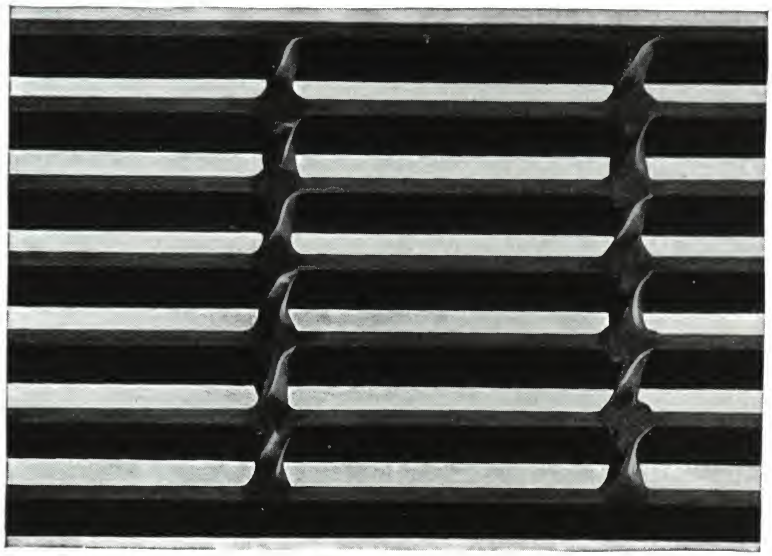
Electroforged

Exclusive Features of Blaw-Knox Electroforged Steel Grating

Non-slip — Perfect traction is afforded by the slightly rough edges of the twisted cross bars which protrude slightly above the surface of the bearing bars.

Greatest Strength—The electroforged one-piece construction utilizes full strength of the gross amount of metal.

The resulting one-piece section has maximum loading capacity per pound.



Section of Electroforged Steel Grating
Showing rigid welding and sharp, flat topped bars

Longest Life—Because of its design and exclusive method of fabrication Electroforged Grating presents a one-piece construction free from cracks, joints, or crevices of any kind. This also enables Electroforged Grating to be 100% protected by paint or galvanizing, leaving no part exposed to corrosive action.

One-piece Grating—Blaw-Knox Electroforged Grating is manufactured by laying the twisted bars across the top of the bearing bars without slotting or cutting the metal.

Enormous pressure and resistance welding electroforges the bar into one piece where the metals cross.

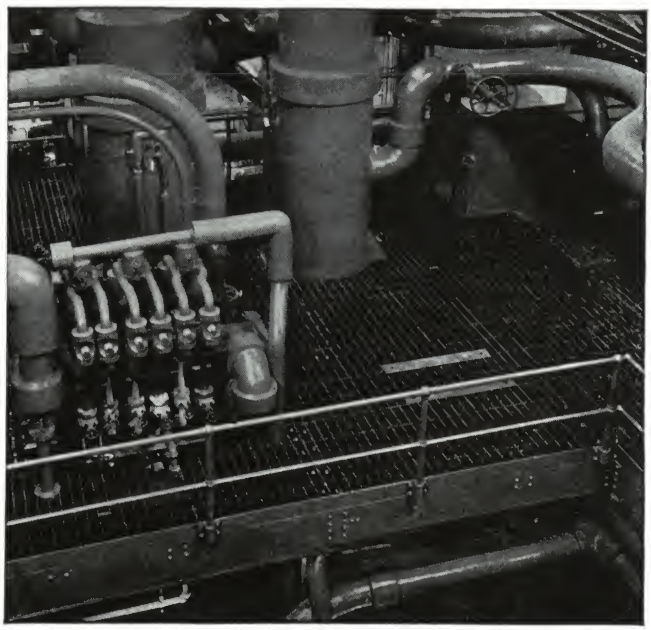
Self-cleaning — No acute angles or projections to collect debris.

Better Light and Ventilation — The construction of Blaw-Knox Electroforged Grating permits clean-cut rectangular openings.

Maximum lighting and ventilation are assured.

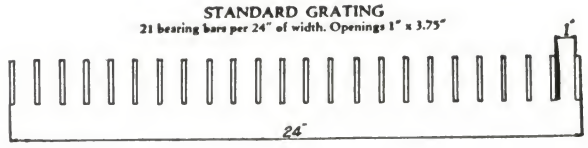
Easily Installed — Installation cost of Blaw-Knox Grating is reduced to a minimum by a very simple and secure method of fastening the grating.

Electroforged Grating in Camden (N. J.) County Park Pumping Station

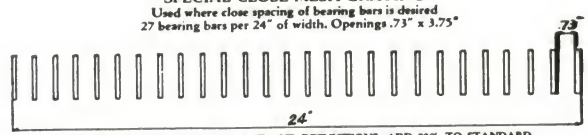


Blaw-Knox Electroforged Grating Installed in Large Power Station

STANDARD GRATING
21 bearing bars per 24" of width. Openings 1" x 3.75"



SPECIAL CLOSE MESH GRATING
Used where close spacing of bearing bars is desired
27 bearing bars per 24" of width. Openings .73" x 3.75"



TO FIND LOAD CAPACITY, WEIGHT AND DEFLECTIONS, ADD 20% TO STANDARD LOAD TABLE AND SPECIFICATIONS ABOVE

Grating Samples

The most convincing argument for the superior features of Blaw-Knox Electroforged Grating is the grating itself. An actual sample is yours for the asking.

Sizes of Electroforged Gratings

Blaw-Knox grating panels are 24 in. wide. Maximum length of panels 20 ft. Lengths of stair treads furnished to suit your requirements. Odd widths of panels, as shown in table, supplied to fill out necessary dimensions.

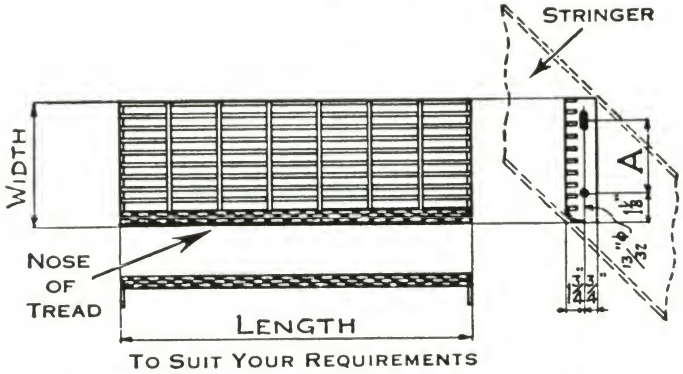
Standard cross-bar spacing 4 in. center to center. Spacings of 3, 2½, 2 and 1¾ in. can also be furnished.

Blaw-Knox Stair Treads

The new Blaw-Knox Electroforged Stair Tread is designed for tremendous strength against impact. It is now manufactured using a nosing made from rolled diamond checkered plate.

STANDARD SIZES AND SPECIFICATIONS

Type "J"—1 x 3/16 in. Bars				Type "L"—1¼ x 3/16 in. Bars			
Width, in.	Min. length, ft.–in.	Sug. max. length, ft.–in.	A, in.	Width, in.	Min. length, ft.	Sug. max. length, ft.–in.	A, in.
6 1/16	1—6	3—0	2½	7¼	2	4—0	4½
7¼	1—6	3—0	4½	8 7/16	2	4—0	4½
8 7/16	1—6	3—6	4½	9⅝	2	4—0	7
9⅝	1—6	3—6	7	10 13/16	2	4—6	7
10 13/16	1—6	3—6	7	12	2	4—6	7



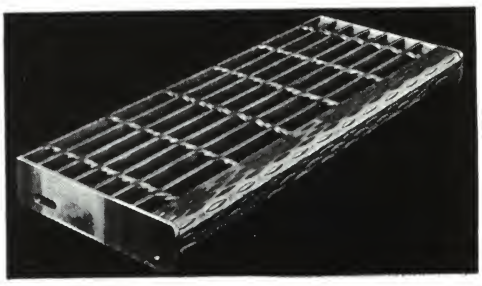


TABLE OF SAFE LOADS

C—Safe concentrated load in pounds per foot of width
U—Safe uniform load in pounds per foot of width. D—Deflection in inches.

Span, ft.-in.		2–0	2–6	3–0	3–6	4–0	4–6	5–0	5–6	6–0	6–6	7–0	8–0	9–0
Size of bearing bars 1 in. apart														
¾x1/8	U	330	222	143										
	D	.085	.134	.192										
	C	330	265	215										
	D	.068	.108	154										
¾x3/16	U	500	320	217										
	D	.085	.134	.192										
	C	500	400	325										
	D	.068	.108	.154										
1x1/8	U	600	384	267	188	150								
	D	.064	.099	.143	.195	.256								
	C	600	480	400	330	300								
	D	.051	.080	.115	.156	205								
1x3/16	U	900	580	400	286	225								
	D	.064	.099	.143	.195	256								
	C	900	725	600	500	450								
	D	051	.080	115	.156	205								
1¼x1/8	U	950	600	420	303	232	184	146	120					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	950	750	630	530	465	415	365	330					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼x3/16	U	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1½x1/8	U	1365	880	610	445	340	266	220	182	150	128	110		
	D	.043	.067	.094	.131	.166	.216	.267	.324	385	.440	.522		
	C	1365	1100	915	785	680	600	550	500	450	415	385		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½x3/16	U	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	522		
	C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1¾x3/16	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
	C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2x3/16	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
	C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼x3/16	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
	C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

Spans to right of heavy line not recommended

Maximum allowable fiber stress 16,000 lbs. per sq. in.

What to Specify When Ordering Blaw-Knox Electroforged Grating

(1) Size of bars and type—standard or special.
(2) Whether to be painted or galvanized.
(3) Complete dimensions of area to be covered.
(4) Direction bearing bars are to run.
(5) Is clearance to be allowed?

DRAVO CORPORATION

MACHINERY DIVISION

Tri-Lok Open Steel Flooring, Armoring and Safety Steps

Manufactured by: THE TRI-LOK COMPANY, Pittsburgh, Pa.

Dravo Building, PITTSBURGH, PA.

Products

TRI-LOK "KING OF THE WALK" TRADE MARK REG.

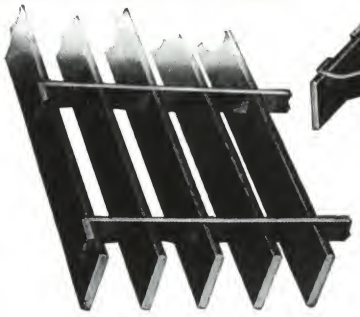
TRI-LOK OPEN FLOORING, in steel, aluminum, wrought iron, brass, etc., made in Rectangular, Diagonal, Super-safety U-type and Radial designs; TRI-LOK SAFETY STEPS; TRI-LOK ARMORING; T-TRI-LOK—Self-supporting Heavy Duty Flooring.

Tri-Lok Flooring Construction and Advantages

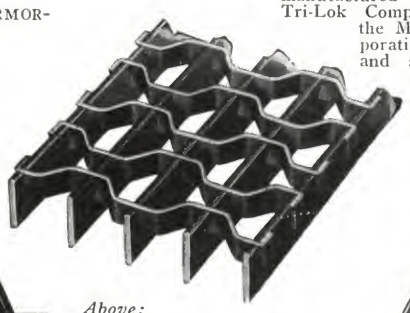
Only two parts are used—bearing bars, which carry the load, having curved slots above the neutral axis (in adjacent bars the slots curve alternately in opposite directions) and cross bars, of the same cross-sectional area as the slot in the bearing bars, forced into these slots under a 1600-ton press. This completes the triple twist and turn lock and laboratory tests have proven the Tri-Lok joint is unimpaired beyond the yield point of the steel.

The cross bars act as cross braces and give perfect distribution of a concentrated load over a wide panel. There are no acute angles to collect refuse or moisture and consequently no rusting at joints; no warping or resultant stresses frequently set up in welding; no rivets to become loose.

Rectangular flooring is approximately 90% open and remains so, a decided advantage in ventilation and illumination.



Tri-Lok Rectangular Flooring



Above: Tri-Lok Diagonal Flooring

Right: Tri-Lok Radial Flooring

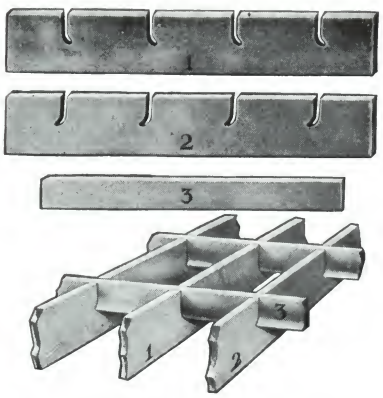
T-Tri-Lok

T-Tri-Lok, manufactured exactly the same as the other Tri-Lok products, except that the main bearing bars are tees, is a self-supporting armoring manufactured in sizes up to 1¾ in. by the Tri-Lok Company and nationally distributed by the Machinery Division of the Dravo Corporation. Larger sizes are manufactured and sold by the Carnegie-Illinois Steel Corporation. The smaller sizes, when filled with concrete, provide an ideal construction for floors, balconies, bridge sidewalks, etc., the dead load being only one-third that of ordinary concrete construction.

Tri-Lok Safety Steps

Tri-Lok Safety Steps

Made up of a panel of Rectangular, Diagonal or Super-safety U-type grating of any desired width, length, depth and bar spacing, furnished with patented visible nosing bar (smooth, checker plate or abrasive anti-slip) together with patented clogless carriers, they meet all requirements for strength and rigidity under impact.



Tri-Lok Parts and Assembly

(1) Bearing bars slotted for friction lock in one direction.

(2) Alternate bearing bars slotted for friction lock in opposite direction.

(3) Cross bars locked by twist in both directions under enormous hydraulic pressure.

Tri-Lok Armoring

Tri-Lok Armoring, consisting of Tri-Lok Flooring panels with bar spacing to suit the particular application, is the simplest and most economical armoring to install. After the concrete or other surface material is poured, Tri-Lok Armoring panels are placed side by side and embedded flush with the surface by walking over or tamping, the twist in the cross bar at the intersection of each bearing bar providing a positive anchor at each joint. Wear and impact is absorbed by the steel bars and cracks cannot pass from one rectangle to another, thus prolonging the life of the floor indefinitely.

SAFE LOADS TRI-LOK RECTANGULAR STEEL FLOORING

Bearing Bars—1 in. apart. Cross Bars—4 in. c. to c.

P—Safe concentrated load in pounds per foot of width.
W—Safe uniform load in pounds per square foot.
D—Deflection in inches.

Size of bearing bars 1" apart		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"
¾" x ⅛"	W	330	222	143										
	D	.085	.134	.192										
	P	330	265	215										
	D	.068	.108	.154										
¾" x 3/16"	W	500	320	217										
	D	.085	.134	.192										
	P	500	400	325										
	D	.068	.108	.154										
1" x ⅛"	W	600	384	267	188	150								
	D	.064	.099	.143	.195	.256								
	P	600	480	400	330	300								
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1" x 3/16"	W	900	580	400	286	225								
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	P	900	725	600	500	450								
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1¼" x ⅛"	W	950	600	420	303	232	184	146	120					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	P	950	750	630	530	465	415	365	330					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼" x 3/16"	W	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	P	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1½" x ⅛"	W	1365	880	610	445	340	266	220	182	150	128	110		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	P	1365	1100	915	785	680	600	550	500	450	415	385		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½" x 3/16"	W	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	P	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1¾" x 3/16"	W	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
	P	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
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2" x 3/16"	W	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
	P	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼"x3/16"	W	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
	P	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

NOTE: We recommend only spans to the left of heavy line (In order to avoid excessive deflection)

Maximum allowable fiber stress 16,000 lbs. per sq. in.

HENDRICK MANUFACTURING COMPANY

Mitco Open Steel Flooring, Mitco Armorgrids, Mitco Shur-Site Treads

57 Dundaff Street, CARBONDALE, PA.

SALES OFFICES IN PRINCIPAL CITIES—CONSULT TELEPHONE DIRECTORY

Products

MITCO OPEN STEEL FLOORING, MITCO ARMORGRIDS and MITCO SHUR-SITE TREADS.

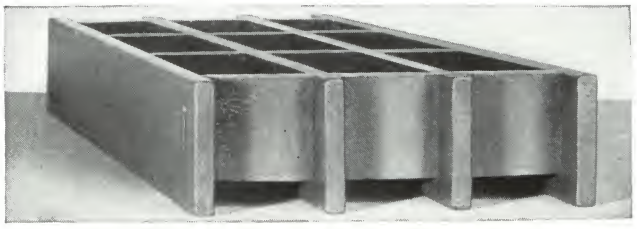
For our Perforated Grilles, see File Index.

Also Perforated Metals, Perforated Metal Screens, Elevator Buckets, Testing Screens, Sheet Metal Work, Stacks, Tanks, Breechings and other light and heavy steel plate construction in all methods and all metals.

MITCO

Reg. U. S. Pat. Off.

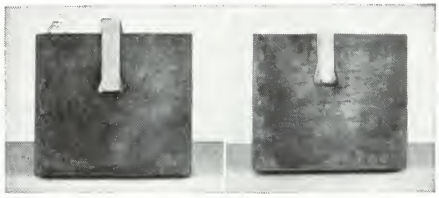
Mitco Open Steel Flooring



Panel of Mitco Open Steel Flooring

Note the depth of the cross bars. In addition to serving as struts, these cross bars provide transverse strength and prevent any lateral deflection.

With its 90% open area, Mitco Open Steel Flooring provides maximum light and ventilation without sacrifice of strength or safety. Mitco is not welded, hence it is free from residual stresses which may cause warping or possible failure of connections in service. Mitco is pressure formed. This construction eliminates mechanical locking devices, bolts, rivets and other sources of possible weakness.



Section Showing Cross Bar in Dovetail, Before Pressing Operation

Section Showing Cross Bar and Bearing Bar After Pressing

In the making of Mitco, the bearing bars are prepared with a dovetail slot to receive the cross or transverse bars. Under hundreds of tons hydraulic pressure, the transverse bars are pressed into the bearing bars so that the metal in the transverse bars completely fills the dovetails in the bearing bars. As the dovetails in the bearing bars are always above the neutral axis and are completely filled by the transverse bars, the strength of the full section is developed. The transverse bars, extending below the neutral axis not only serve as struts but also provide transverse strength, firmly locking the panel of Mitco into an integral unit, distributing concentrated loads over the entire panel and preventing any lateral deflection.

Free from bolts, rivets, acute angles or other obstructions, Mitco is practically self-cleaning and provides maximum light and ventilation from floor to floor.

Mitco Armorgrids

Mitco Armorgrids materially prolong the life of concrete, cement, asphalt, mastic or other composition floors. Laid in the floor, with the tops of the panels flush with the floor surface, Mitco Armorgrids absorb the brunt of shocks, grinding loads and continuous wear. They prevent cracking and potholing, thereby reducing floor maintenance. Mitco Armorgrids, furnished in large or small units, are easily and economically installed. They are furnished completely fabricated, and require no assembly in the field.

Main trucking aisle, in the plant of a well-known manufacturer, armored with Mitco Armorgrids

Mitco Shur-Site Treads

Mitco Shur-Site Treads, for stairs, ladders and fire escapes, are integral units made of Mitco Open Steel Flooring, with the rectangular openings, non-slipping and non-clogging surface and other Mitco advantages. They are furnished in widths and lengths to meet all requirements, ready to bolt directly to stair stringers. No shelf angles are required.

SAFE LOADS IN POUNDS BASED ON FIBRE STRESS OF 16,000 POUNDS PER SQUARE INCH

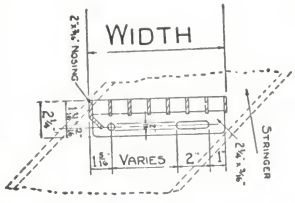
U—Safe Uniform Load in Pounds per Square Foot D—Deflection in Inches
C—Safe Concentrated Load in Pounds per Foot of Width

Size of bearing bars, in.	Size of cross bars, in.		2′0″	2′6″	3′0″	3′6″	4′0″	4′6″	5′0″	5′6″	6′0″	6′6″	7′0″	8′0″	9′0″
¾ x 1/8	5/8 x 1/8	U	330	222	143										
		D	.085	.134	.192										
		C	330	265	215										
		D	.068	.108	.154										
¾ x 3/16	5/8 x 1/8	U	500	320	217										
		D	.085	.134	.192										
		C	500	400	325										
		D	.068	.108	.154										
1 x 1/8	7/8 x 1/8	U	600	384	267	188	150								
		D	.064	.099	.143	.195	.256								
		C	600	480	400	330	300								
		D	.051	.080	.115	.156	.205								
1 x 3/16	7/8 x 1/8	U	900	580	400	286	225								
		D	.064	.099	.143	.195	.256								
		C	900	725	600	500	450								
		D	.051	.080	.115	.156	.205								
1¼ x 1/8	7/8 x 1/8	U	950	600	420	303	232	184	146	120					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	950	750	630	530	465	415	365	330					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼ x 3/16	7/8 x 1/8	U	1425	900	633	457	350	278	220	182					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	1425	1125	950	800	700	625	550	500					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
1½ x 3/16	1 x 1/8	U	1365	880	610	445	340	266	220	182	150	128	110		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	1365	1100	915	785	680	600	550	500	450	415	385		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½ x 3/16	1 x 1/8	U	2050	1320	917	672	512	400	330	273	225	192	164		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.306	.361	.418		
1¾ x 3/16	1 x 1/8	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
		D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
		C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
		D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2 x 3/16	1¼ x 1/8	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
		D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
		C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
		D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼ x 1/16	1¼ x 1/8	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
		D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
		C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
		D	.023	.035	051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

SPANS TO RIGHT OF HEAVY LINE NOT RECOMMENDED

Standard Type "C" has bearing bars spaced on 1 3/16-in. centers and cross bars spaced on 4¾-in. centers, or 4-in. centers if preferred. This applies for grating with either ⅜-in. thick or ⅛-in. thick bearing bars. Closer or wider spacing of bearing bars and/or cross bars can be furnished to meet special requirements.

MITCO SHUR-SITE TREADS



Type "C"—1″x3/16″-Bars			Type "C"—1¼″x3/16″-Bars		
Width	Length		Width	Length	
	Min.	Max.		Min.	Max.
6 1/16″	1′6″	3′0″	7¼″	2′0″	4′0″
7¼″	1′6″	3′0″	8 7/16″	2′0″	4′0″
8 7/16″	1′6″	3′6″	9 5/8″	2′0″	4′0″
9 5/8″	1′6″	3′6″	10 13/16″	2′0″	4′6″
10 13/16″	1′6″	3′6″	12″	2′0″	4′6″

Note: The tables give standard widths and suggested minimum and maximum lengths. Other widths and any lengths can be furnished to meet requirements; also other thicknesses and depths of main bars.

IRVING SUBWAY GRATING CO., INC.

IRVING IRON WORKS COMPANY (SUBSIDIARY)

(ESTABLISHED IN 1902)

50-09 27th Street, LONG ISLAND CITY, N. Y.

BRITISH LICENSEES: Estler-Irving Ltd., SLOUGH, BUCKS., ENGLAND
CANADIAN LICENSEES: Canada Ingot Iron Company, Ltd., GUELPH, ONTARIO, CANADA
OFFICES IN PRINCIPAL CITIES—CONSULT LOCAL TELEPHONE BOOK FOR ADDRESS

Makers of

IRVING SUBWAY GRATING PRODUCTS

Continuity or Paneled

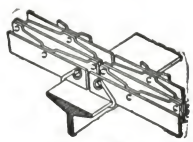
Grating—Floor Armoring—Stair Treads—Bridge Decking—Steel Pavement

Irving "Subway Continuity" Grating is an ideal industrial floor—slip-proof, stumble-proof and free from all underfoot hazards. It provides a perfect traffic and traction surface, *without a joint or joint lines,* because of the unique method of splicing the units. There are no separate panels to loosen, wobble or up-end, and no butt-joints for wheel loads to pound.

The illustration below clearly shows the clean-cut, neat appearance of an Irving floor—no joints or joint lines—*it is a one-piece job from side-to-side and continuous in all directions.* Irving "Subway" Grating can be furnished in panels if desired.

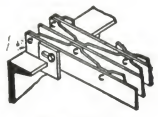
TRADE MARKS
(Reg. U. S. Pat. Off.)

SUBWAY
IRVICO
ARMORING
RETICULINE
UNIFIED
STREAMLINE
CONTINUITY
VIZABLEDG
SAFTRED
SAFSTEP
SAFKAR
SUNWAY
SUBLIT



Type C-1

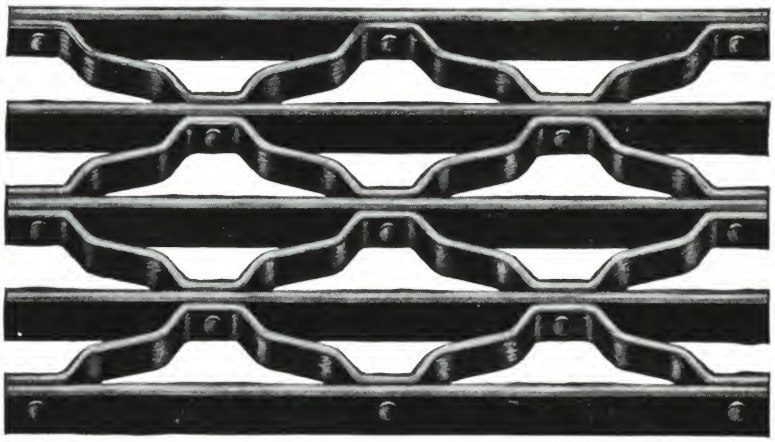
¼-in. *round hooks,* furnished as standard equipment unless otherwise specified; sometimes furnished straight, of varying length, to be bent on the job



Type C-2

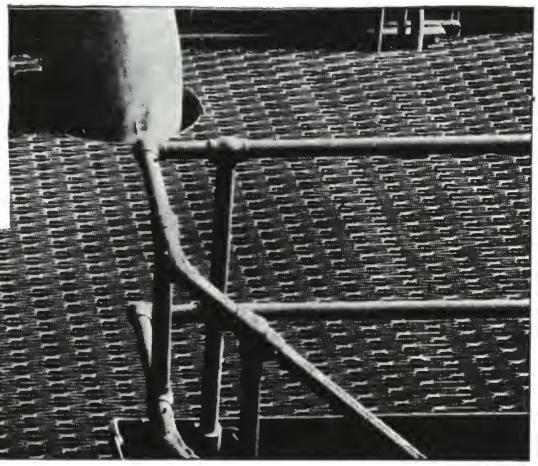
Adjustable clip, furnished for use with angle or channel iron support; can be used only with Types "M," "Q," "V" and requires full data on location of supports

Fastening Devices Most Commonly Used

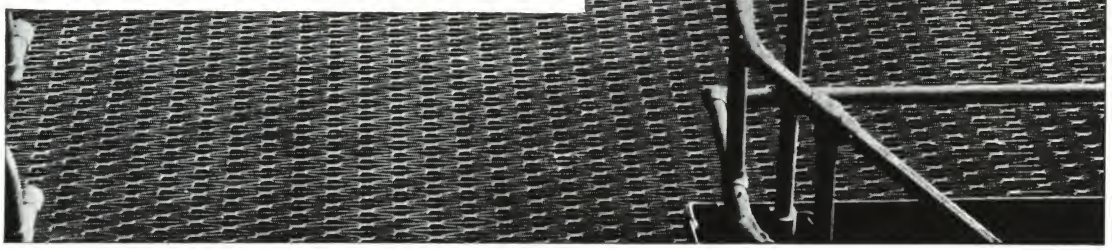


IRVING SUBWAY

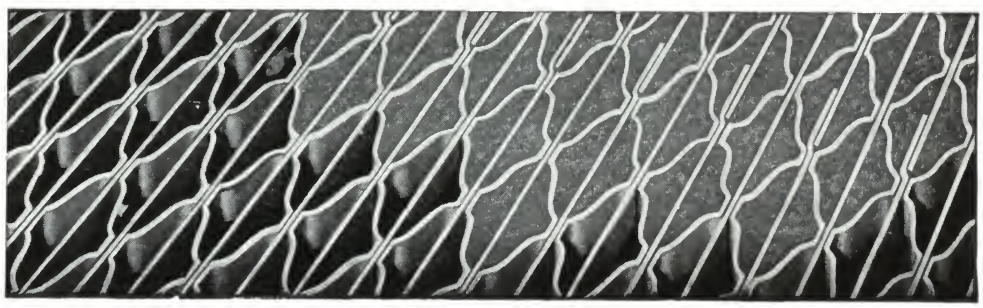
Continuous in All Directions
Maximum Foot Contact
No Joints Anywhere
Maximum Wheel Contact



Trussed for Strength ● Riveted for Security



IRVING "CONTINUITY" INDUSTRIAL FLOOR ARMORING



Irving "Continuity" Floor Armoring is a one-piece steel mat, upon which the loads roll smoothly in all directions.

There are no butt-joints for wheel loads to pound. The steel takes the wear. The fill acts only to prevent corrosion of the steel. It provides 100% protection against traffic, shock, cracks and breaks. It assures permanent satisfaction and economy.

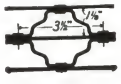
IRVING SUBWAY GRATING

Table of *Safe Loads* for Types "M", "O", "AA", and "BB" only; for Types "Q", "R", "CC" and "DD", increase 40%; for Type "V" decrease 50%. Maximum fibre stress, 16,000 lb.

Symbol and depth	Straight bars in.	U = Uniform Load, lbs. per sq. ft. C = Concentrated Loads, lbs. per ft. of width. D = Deflection in inches	2′-0″	2′-6″	3′-0″	3′-6″	4′-0″	4′-6″	5′-0″	5′-6″	6′-0″	6′-6″	7′-0″	8′-0″	9′-0″
1S ¾″	¾×⅛	U	330	222	143										
		D	.085	.134	.192										
		C	330	265	215										
		D	.068	.108	.154										
1SA ¾″	¾×3/16	U	500	320	217										
		D	.085	.134	.192										
		C	500	400	325										
		D	.068	.108	.154										
2S 1″	1 ×⅛	U	600	384	267	188	150								
		D	.064	.099	.143	.195	.256								
		C	600	480	400	330	300								
		D	.051	.080	.115	.156	.205								
2SA 1″	1 ×3/16	U	900	580	400	286	225								
		D	.064	.099	.143	.195	.256								
		C	900	725	600	500	450								
		D	.051	.080	.115	.156	.205								
3SA 1¼″	1¼×⅛	U	950	600	420	303	232	184	146	120					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	950	750	630	530	465	415	365	330					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
3S 1¼″	1¼×3/16	U	1425	900	633	457	350	278	220	182					
		D	.051	.081	.115	.157	.205	.259	.321	.389					
		C	1425	1125	950	800	700	625	550	500					
		D	.041	.064	.092	.125	.163	.207	.256	.310					
4SA 1½″	1½×⅛	U	1365	880	610	445	340	266	220	182	150	128	110		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	1365	1100	915	785	680	600	550	500	450	415	385		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
4S 1½″	1½×3/16	U	2050	1320	917	672	512	400	330	273	225	192	164		
		D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
		C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
		D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
5S 1¾″	1¾×3/16	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
		D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
		C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
		D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
6S 2″	2 ×3/16	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
		D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
		C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
		D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
7S 2¼″	2¼×3/16	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
		D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
		C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
		D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

SPANS TO RIGHT OF HEAVY LINE NOT RECOMMENDED

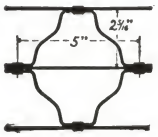
Type "M"
7 in. c. to c. rivets
1⅛ in. between bars



Type "O"
3½ in. c. to c. rivets
1⅛ in. between bars

Type "Q"
7 in. c. to c. rivets
¾ in. between bars

Type "R"
3½ in. c. to c. rivets
¾ in. between bars



Type "V"
5 in. c. to c. rivets
2⅛ in. between bars

Heavy Loads—Occasionally there are open flooring requirements calling for very heavy loading, especially heavy wheel concentrations. These, of course, call for heavy "special" gratings. We are prepared to design and fabricate an Irving "Subway" grating that will meet your requirements.

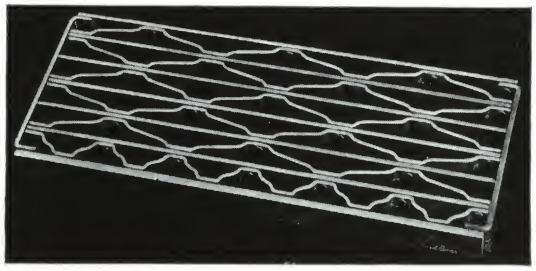
IRVING "VIZABLEDG SAFSTEPS"

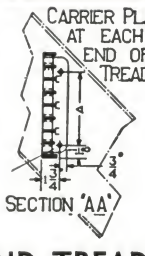
Miss-proof, Slip-proof, Easily Installed

These safety steps guard against slipping and overstepping the edge. "M" mesh is used throughout, except next to nosing bar, where "O" mesh or crimp provides an edge that stands out boldly from the step proper. Each Safstep is a *self-contained unit* with carrier plates attached.

STANDARD "VIZABLEDG" STOCK SIZES

Stock No.	Width in.	Length ft.	Length in.	Distance "A," in.	Wt., lb.	See specifications at right	Stock No.	Width in.	Length ft.	Length in.	Distance "A," in.	Wt., lb.	See specifications at right
1	5¼	1	7	2½	6.0	A	13	8⅛	4	6	4½	37.4	C
2	5¼	1	10½	2½	7.0	A	14	10¼	1	7	7	10.4	A
3	5¼	2	2	2½	7.7	A	15	10¼	1	10½	7	11.9	A
4	5¼	2	5½	2½	11.3	B	16	10¼	2	2	7	13.8	A
5	5¼	3	0½	2½	14.0	B	17	10¼	2	5½	7	20.0	B
6	7¾	1	7	4½	8.2	A	18	10¼	3	0½	7	24.0	B
7	7¾	1	10½	4½	9.4	A	19	10¾	3	7½	7	39.0	C
8	7¾	2	2	4½	10.4	A	20	10¾	3	11	7	42.1	C
9	7¾	2	5½	4½	16.1	B	21	10¾	4	6	7	48.7	C
10	7¾	3	0½	4½	18.8	B	22	12 1/16	3	7½	7	44.4	C
11	8⅛	3	7½	4½	30.3	C	23	12 1/16	3	11	7	47.6	C
12	8⅛	3	11	4½	32.9	C	24	12 1/16	4	6	7	54.2	C





"Vizabledg Safstep" with "O" Type Crimp Nosing

Furnished with perforated metal nosing as shown on "X-Bar" Tread below if desired.

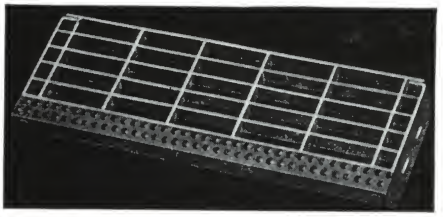
	A	B	C
Straight bars, in.	¾×⅛	1 ×⅛	1¼×3/16
Reticuline bars, in.	½×⅛	¾×⅛	¾×⅛
Nosing bars, in.	1 ×¼	1¼×¼	1½×¼
Carrier bars, in.	2½×3/16	2½×3/16	2½×3/16

IRVING "X-BAR" GRATING AND TREADS

"X-Bar" Grating

A rectangular mesh grating whose cross bars are expanded into tapered slots in carrying bars. These slots do not extend below the neutral axis, but cross bars extend below these slots, thereby bracing the carrying bars against "shuttering" or overturning.

Type	Bearing Bars	Cross Bars
AA	1 3/16 in. on centers	4 in. on centers
BB	1 3/16 in. on centers	2 in. on centers
CC	15/16 in. on centers	4 in. on centers
DD	15/16 in. on centers	2 in. on centers



Irving "Vizabledg X-Bar" Tread

Made with a raised perforated nosing for a non-slip edge which stands out clearly. Can be furnished with either plate or angle carriers. Made in all sizes

KERLOW STEEL FLOORING COMPANY

Grating Flooring, Safety Steps, Bridge Paving and Allied Products

222-238 Culver Avenue
JERSEY CITY, N. J.

A Guaranteed Product

There is a guaranteed Kerlow product for every industrial, engineering, marine and architectural project; and a type and strength for all service conditions.

Kerlow Products have achieved unvarying success and have proven their dependability.

Kerlow Grating, of all types, is manufactured of steel with a painted or galvanized finish and of aluminum, brass, stainless steel, or copper-bearing steel alloys, as conditions may require.

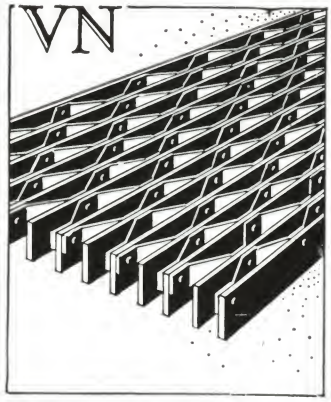
Engineering Service

The KERLOW STEEL FLOORING COMPANY retains competent engineers, experienced in floor, stair and steel constructions. They are prepared to help solve all flooring problems and submit estimates without cost or obligation.

KERLOW STEEL GRATING FLOORING

Series VN

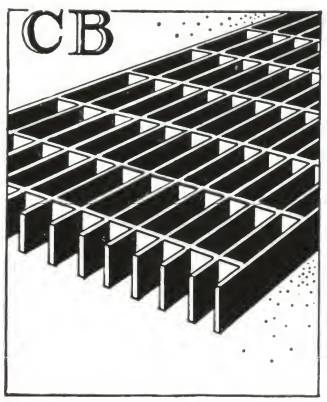
This popular non-slip grating is the riveted reticulated construction. It is the all-purpose floor; clean, fireproof and ventilating with every traction attribute of a solid floor. It can be worked, walked and wheeled upon in every direction with comfort, ease and safety. Designed on the truss principle, the strongest and most efficient known. The bearing bars are on edge and are riveted together through full trusses at frequent intervals above the neutral axis. This gives a permanent one-piece construction with no displacement of metal, i.e., raised surfaces nor intergranular corrosion from welding. No integral strains due to welding.



All types are available in 18 weights for various loadings and spans in any width up to 48 in. The reticulated or crimp bars are of less depth than bearing bars.

Series CB

This non-slip grating is of rectangular mesh construction. It is swaged under hydraulic pressure with the proven positive dovetail lock construction. Slotting terminates *above* the neutral axis of bearing bars, thus providing maximum strength, and cross bars extend below the bottom of the slots, eliminating possibility of lateral deflection. As lock is swaged cold, no internal strains are developed to produce warping. All types are available in 18 weights for various loadings and spans.



SAFE LOAD TABLE COVERING KERLOW GRATING TYPES CB AND VN
For CB decrease 7%. Maximum fibre stress 16,000 lbs.

C—Safe concentrated load in pounds per foot of width.
U—Safe uniform load in pounds per foot of width. D—Deflection in inches.

Bearing bars sizes		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"
¾"x1⅛"	U	330	222	143										
	D	.085	.134	.192										
	C	330	265	215										
	D	.068	.108	154										
¾"x3/16"	U	500	320	217										
	D	.085	.134	.192										
	C	500	400	325										
	D	.068	.108	.154										
1"x1⅛"	U	600	384	267	188	150								
	D	.064	.099	.143	.195	.256								
	C	600	480	400	330	300								
	D	.051	.080	.115	.156	.205								
1"x3/16"	U	900	580	400	286	225								
	D	.064	.099	.143	.195	.256								
	C	900	725	600	500	450								
	D	.051	.080	.115	.156	.205								
1¼"x1⅛"	U	950	600	420	303	232	184	146	120					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	950	750	630	530	465	415	365	330					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1¼"x3/16"	U	1425	900	633	457	350	278	220	182					
	D	.051	.081	.115	.157	.205	.259	.321	.389					
	C	1425	1125	950	800	700	625	550	500					
	D	.041	.064	.092	.125	.163	.207	.256	.310					
1½"x1⅛"	U	1365	880	610	445	340	266	220	182	150	128	110		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	C	1365	1100	915	785	680	600	550	500	450	415	385		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1½"x3/16"	U	2050	1320	917	672	512	400	330	273	225	192	164		
	D	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522		
	C	2050	1650	1375	1175	1025	900	825	750	675	625	575		
	D	.034	.053	.077	.104	.137	.173	.214	.259	.308	.361	.418		
1¾"x3/16"	U	2800	1780	1230	915	700	544	440	364	308	262	228	175	133
	D	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737
	C	2800	2225	1860	1600	1400	1225	1100	1000	925	850	800	700	600
	D	.029	.046	.066	.090	.117	.148	.183	.221	.264	.308	.358	.468	.593
2"x3/16"	U	3650	2340	1618	1200	912	723	580	482	400	346	293	225	178
	D	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651
	C	3650	2925	2425	2100	1825	1625	1450	1325	1200	1125	1025	900	800
	D	.026	.040	.057	.078	.102	.129	.160	.193	.230	.269	.314	.409	.518
2¼"x3/16"	U	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228
	D	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574
	C	4650	3700	3100	2650	2300	2050	1850	1675	1550	1425	1325	1150	1025
	D	.023	.035	.051	.070	.091	.115	.142	.172	.204	.240	.279	.364	.460

Spans to right of heavy line not recommended

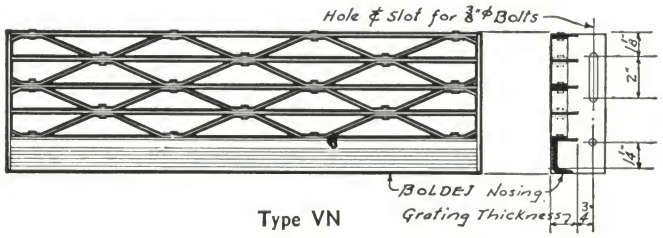
Maximum allowable fiber stress 16,000 lbs. per sq. in.

KERLOW BOLDEJ SAFETY STEPS

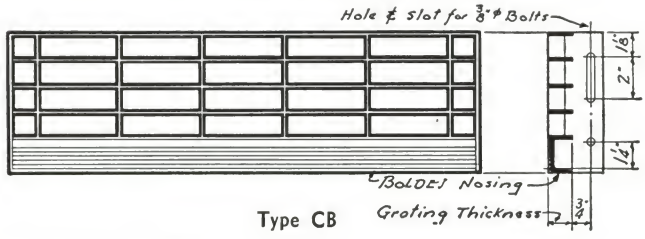
The Kerlow Boldej Safety Step is recognized by many as the best and safest grating step on the market today. The Kerlow Boldej patented step presents a tread nosing which actually presents a line of demarcation of each step; the ribbed nosing prevents wear and slipping; the nosing is rounded off to suit the roll of the foot and has no sharp corners to cause tripping; all-steel and unbreakable. Patented carrier plates prevent misfitting of the carriers due to any variations of the holes in the stringers. Kerlow Boldej steps are made in both VN and CB types, in any lengths and in widths given in table.

For safety specify and insist upon Kerlow "Boldej" Safety Steps.

Type	Bearing bar dimension, in.	Standard width, in.
CB	1/8	6 1/8, 7 1/4, 8 7/16, 9 9/16, 10 3/4
CB	3/16	6 1/8, 7 1/4, 8 7/16, 9 9/16, 10 3/4
VN	1/8	5 3/4, 6 5/8, 7 7/8, 9 1/8, 10 3/8, 11 5/8
VN	3/16	5 5/8, 6 15/16, 8 1/4, 9 9/16, 10 7/8



Type VN



Type CB

SPECIFICATIONS

The following alternate paragraphs should be included in all general specifications, under gratings:

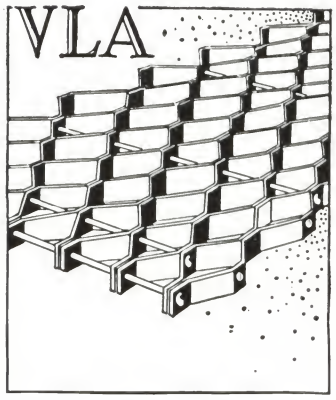
All floor and stair step material shall be that manufactured by The Kerlow Steel Flooring Company, Jersey City, N. J.

Or, as an alternate to the above, the following:

All floors and stair steps shall be of open metal flooring (bars on edge), permanently secured to each other at 6¾-in. intervals if reticulated, and at 4-in. intervals if rectangular construction. It is often advisable to be explicit and to list under "Work Included" in the general grating flooring specifications, the various floor areas to be constructed of Kerlow Metal Flooring together with the prescribed live load.

STEELEJ FLOOR ARMOR

Series VLA Steelej Floor Armor is designed to be embedded in mastic or concrete floors of all kinds which are subjected to heavy industrial or vehicular traffic. Made of all reticuline bars (no bars at right angles) assures a smooth, non-slip traction surface regardless of direction of travel. This system of armor provides a smooth surface that is practically unlimited as to life and wear. Considering its long life, Steelej Floor Armor is an economical method of producing a surface to meet increasing demands of modern traffic. It will prevent cracking and disintegration from load shocks.



Series VLA is made in 5 types with various sized openings and each type is supplied in 5 weights. Standard widths are in multiples of the mesh in each case (opening plus bar thickness). Units are fabricated in lengths to approximately 16 ft. Also available in square mesh pattern, i.e., all CB grating types.

Type		VELA	VLA	VSLA	VMLA	VMSLA
Opening between bar, in.		1½	2	2¼	2½	3
No.	Bar dimensions, in.	Weight per sq. ft., lbs.				
1	¾ x 1/8	4.7	3.7	3.4	3.2	2.8
2	1 x 1/8	6.2	4.9	4.5	4.2	3.7
3	1 x 3/16	8.6	6.9	6.3	5.9	5.3
4	1¼ x 1/8	7.7	6.1	5.6	5.1	4.6
5	1¼ x 3/16	10.7	8.6	7.9	7.3	6.6

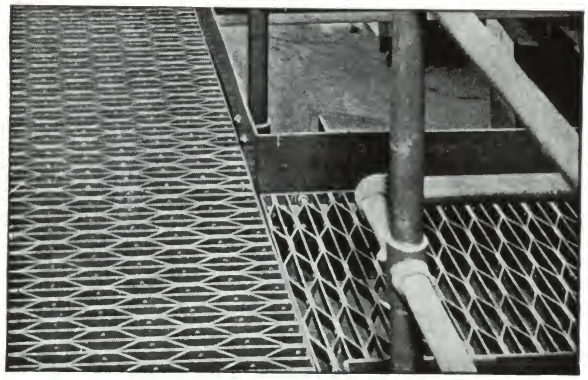
1912-1938

WILLIAM F. KLEMP COMPANY, INC.

6601 South Melvina Avenue
(Clearing P. O.) CHICAGO, ILL.
REPRESENTATIVES IN ALL PRINCIPAL CITIES

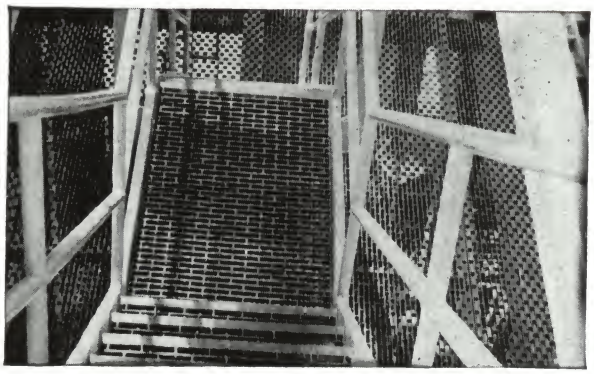
OPEN STEEL FLOORING

Diamond Grating

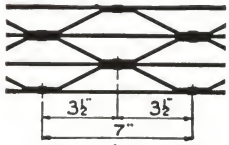


Type "A" Reversible, Type "A-A" Non-reversible

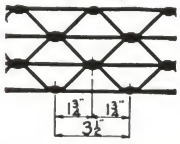
Klemco Grating



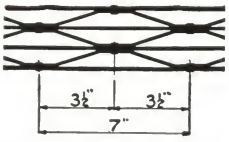
Type "K" Reversible, Type "K-K" Non-reversible



Type "A"—1-in. Clear Opening



Type "B"—1-in. Clear Opening



Type "C"—⅝-in. Clear Opening

DIAMOND GRATING is made up from the Engineers drawing to proper size for individual requirements.

Cutouts are made, where necessary, to fit around pipes, columns, hanging supports, and machinery bases, insuring a perfect fitting and complete job. The truss principle of this type fabricated with machine driven rivets produces unusual strength.

Radial Grating of this type is manufactured in radial units to fit circular walkways without cutting or distortion in any way.

KLEMCO GRATING made in steel, aluminum, stainless steel, brass or bronze has many advantages; the staggered cross bar provides a practical non-slip walking surface. The foot contacts 2 carrier- and 2 cross bars at every step, the design is pleasing to the eye, it has maximum strength on either side, it can be painted easily in the field, it is self-cleaning and has approximately 90% open area for light and ventilation. The slabs can be made up in any desired widths, lengths or depths, and like our Diamond Grating, it is made from the engineers drawing to individual requirements.

The standard clear opening is 1 in. between carrier bars and the cross bars are on 4-in. centers; however, any desired spacing can be furnished. When specifying use our "A-A" load tables at the bottom of this page.

Samples will be supplied on request.

TABLE OF SAFE LOADS

The following safe loads are the U. S. Government Specification R. R. G. 661 for minimum requirements

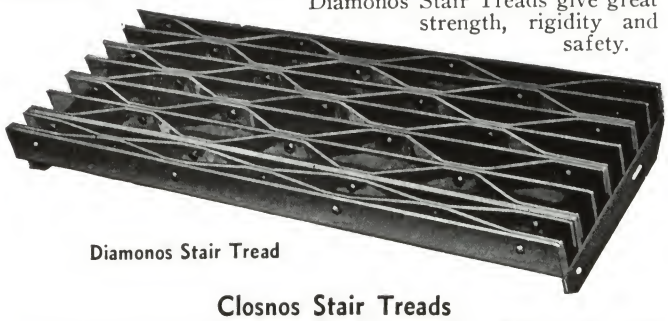
Type and Specification				2'0"	2'6"	3'0"	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"	8'0"	9'0"	Wgt.
AA1	Str. Bar	¾" x 1/8"	W	330	222	143											5.2
	Bent Bar	½" x 1/8"	Dc	.085	.134	.192											
AA1X	Str. Bar	¾" x 3/16"	W	500	320	217											6.7
	Bent Bar	½" x ¼"	Dc	.085	.134	.192											
AA2	Str. Bar	1" x 1/8"	W	600	384	267	188	150									7.3
	Bent Bar	¾" x 1/8"	Dc	.064	.099	.143	.195	.256									
AA2X	Str. Bar	1" x 3/16"	W	900	580	400	286	225									9.3
	Bent Bar	¾" x 1/8"	Dc	.064	.099	.143	.195	.256									
AA3X	Str. Bar	1¼" x 1/8"	W	950	600	420	303	232	184	146	120						9.1
	Bent Bar	1" x 1/8"	Dc	.051	.081	.115	.157	.205	.259	.321	.389						
AA3	Str. Bar	1¼" x 3/16"	W	1425	900	633	457	350	278	220	182						11.9
	Bent Bar	1" x 1/8"	Dc	.051	.081	.115	.157	.205	.259	.321	.389						
AA4X	Str. Bar	1½" x 1/8"	W	1365	880	610	445	340	266	220	182	150	128	110			10.5
	Bent Bar	1" x 1/8"	Dc	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522			
AA4	Str. Bar	1½" x 3/16"	W	2050	1320	917	672	512	400	330	273	225	192	164			13.5
	Bent Bar	1" x ¼"	Dc	.043	.067	.094	.131	.166	.216	.267	.324	.385	.440	.522			
AA5	Str. Bar	1¾" x 3/16"	W	2800	1780	1230	915	700	544	440	364	308	262	228	175	133	15.1
	Bent Bar	1" x 1/8"	Dc	.038	.057	.082	.112	.147	.185	.229	.276	.330	.387	.450	.580	.737	
AA6	Str. Bar	2" x 3/16"	W	3650	2334	1618	1200	912	723	580	482	400	346	293	225	178	16.7
	Bent Bar	1" x 1/8"	Dc	.032	.050	.072	.099	.128	.163	.201	.243	.289	.341	.397	.516	.651	
AA7	Str. Bar	2¼" x 3/16"	W	4650	2960	2065	1515	1150	912	740	608	516	438	379	288	228	18.2
	Bent Bar	1" x 1/8"	Dc	.027	.044	.064	.087	.113	.148	.177	.214	.255	.305	.349	.455	.574	

Note: Armour Institute of Technology and Pittsburgh Testing Laboratory tests prove that the above table is but 60% of actual carrying capacity of our grating.

Diamonos Stair Treads

The nosing is made up of two ¼-in. bars spaced 1½ in. center to center. These bars are separated by ⅜-in. bent bars forming a diamond, and are firmly riveted together by machine. The outside or toe bar is ¼ in. deeper than the grating in tread, while the second ¼-in. bar is same depth as grating. Support angles are of 1½ x 1½ x $\frac{3}{16}$-in. material and punched to conform with holes in the stair stringers. These angles are electrically welded to the toe bar and grating in tread. A jig is used in assembling, thus insuring squareness, accuracy in length, and perfect alignment.

Diamonos Stair Treads give great strength, rigidity and safety.



Diamonos Stair Tread

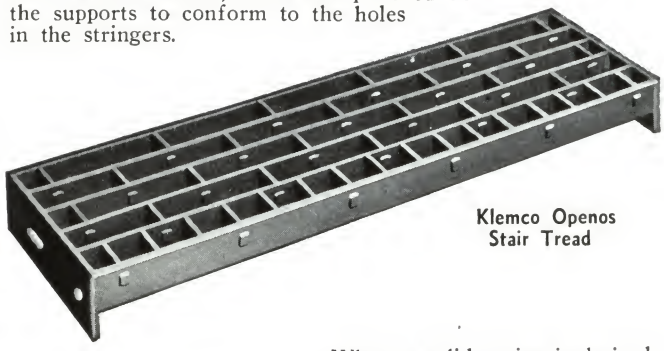
Closnos Stair Treads

The next time in walking up or down a flight of stairs, watch where you put your weight. It is always on the first few inches—nose of the stair. That is why KLEMP engineers produced stair treads, to give strength where strength is needed. The reinforced nose also forms a line of demarcation between treads, insuring perfect visibility.

Closnos Stair Tread

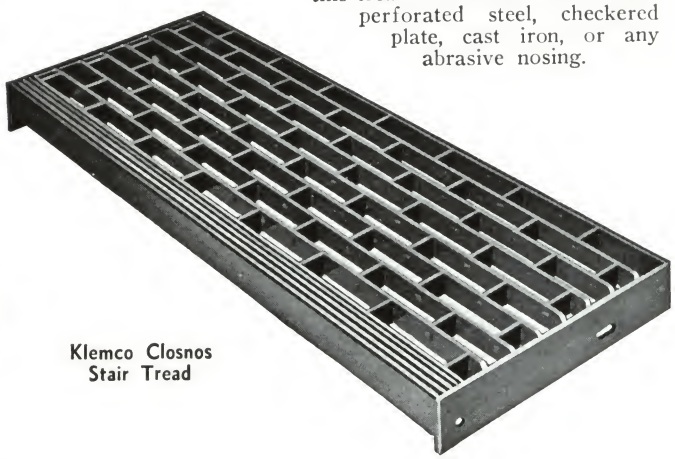
Klemco Stair Treads

This tread, like the Diamonos, is designed to meet the most rigid requirements. A nosing bar ¼ in. in thickness and ¼ in. deeper than the grating in the tread is electrically welded to the supports to provide maximum strength and rigidity. As in all other KLEMP treads, holes are punched in the supports to conform to the holes in the stringers.



Klemco Openos Stair Tread

Where a solid nosing is desired, this tread is furnished with raised perforated steel, checkered plate, cast iron, or any abrasive nosing.



Klemco Closnos Stair Tread

HEXTEEL SURFACE ARMOR (Patented)

Hexteel indefinitely prolongs the life of all heavy duty surfaces of industrial floors, aisles, loading platforms, docks, railroad crossings, bridge decks, viaducts, driveways and walks, where surfacing material is applied. It eliminates worn and broken surfaces, potholes, ridges and ruts making further maintenance unnecessary.

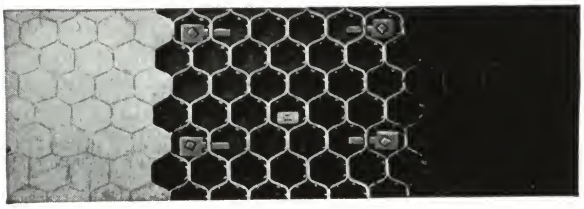
Hexteel is made of copper bearing steel. The standard units are 3 x 10 ft., but lesser widths and lengths will be furnished if desired. The hexagonal openings are 1¾ in., and it is made in 12 and 14-gauge thickness by ¾-in., 1-in., and 1¼-in. depths. The ¾ x 14-gauge is most generally used, except where there is extremely heavy, constant traffic, in which case the greater thickness or depths may be desirable.

Hexteel is equally applicable for new or old concrete or wooden bases and may be filled with concrete, hot or cold mastic, or any plastic floor material. When the application is on wooden bases, anchors are supplied by us without charge to securely fasten the armor to the base.

Hexteel, when assembled and clinched together in the field with the tool supplied by us, produces a continuous, seamless and symmetrical steel mat on which truck wheels having a 2-in. or greater face may be moved in any direction without leaving the metal wearing surface.

Hexteel detailed information is yours for the asking.

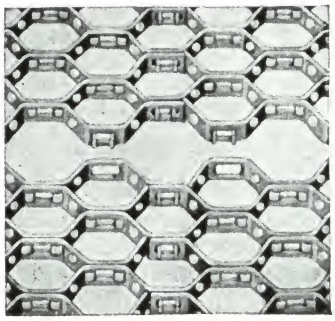
End Connection



Concrete Filled

Anchored to Wood Base

Mastic Filled



Side Connection

REUTER BROS. IRON WORKS, INC.

Fabricators of Structural Steel and Architectural Metal Work of All Kinds

5820 South Wood Street
CHICAGO, ILL.

TELEPHONE
Republic 4800

REUTER "KNOBBED I BAR" STEEL GRATING AND FLOORING

Patent No. 1946035

Design

This metal grating is designed with the best engineering practice providing a steel grating and flooring with outstanding features.

Maximum resistance to slipping.
Maximum strength with minimum weight.
Maximum passage of light and ventilation.
Maximum durability and self-cleaning.

Construction

In this metal grating the longitudinal bars are all load carrying of one depth and made of specially designed hot rolled "I" shaped section with a *"knobbed surface"* (similar to non-slip steel floorplates). Owing to the "I" shaped section this grating will carry a greater load per square foot compared with even depth of rectangular bar construction. Sections are spaced by transverse bars welded at every intersection making it practically one piece construction. The demand for an effective non-slip steel grating and flooring has long existed. We now have perfected this efficient and self evident superior product.

Prices submitted on request. Sample (paperweight size) mailed without obligation.

MAXIMUM SAFE LOAD PER SQ. FT., IN POUNDS, UNIFORMLY DISTRIBUTED

Depth of bar, in.	No. bars per ft. width	SPAN										
		2′-0″	2′-6″	3′-0″	3′-6″	4′-0″	4′-6″	5′-0″	6′-0″	7′-0″	8′-0″	9′-0″
¾	9	634	406	281	207	157	125	101	70	51	..	..
	10	705	451	313	230	175	139	113	78	57	..	..
	11	775	496	344	253	182	152	124	85	62	..	..
1	9	1150	736	511	375	287	227	183	128	94	72	..
	10	1278	818	568	417	319	252	204	142	104	80	..
	11	1405	899	624	458	350	277	224	156	114	88	..
1¼	9	1668	1067	741	544	417	329	266	185	136	104	82
	10	1854	1186	824	605	463	366	296	206	151	116	94
	11	2039	1304	906	665	509	402	325	226	166	127	100
1½	9	2327	1489	1034	759	581	460	372	258	190	146	115
	10	2586	1655	1149	844	646	511	414	287	211	162	128
	11	2844	1820	1263	928	710	562	455	315	231	178	140

ACME STEEL COMPANY

Manufacturers of Acme Floorsteel for Industrial Floors

2842 Archer Avenue, CHICAGO, ILL.

BRANCHES

NEW YORK, N. Y., 103 Park Avenue
ATLANTA, GA., 603 Stewart Avenue, S. W.
BALTIMORE, MD., 455 Guilford Avenue
MONTREAL, QUE., 369 St. Paul Street, W.
WINNIPEG, MAN., National Cartage Warehouse
TORONTO, ONT., 32 Front Street, W.
LOS ANGELES, CAL., 1934 E. 15th Street
SAN FRANCISCO, CAL., 432 Bryant Street
SEATTLE, WASH., 114 South Alaskan Way

ACME HEAVY DUTY FLOORSTEEL

U. S. Patents No. 1,432,171, Oct. 17, 1922; No. 1,943,328, Jan. 16, 1934; No. 1,952,721, March 27, 1934; No. 1,981,489, Nov. 20, 1934

Canadian Patents No. 303,151, Aug. 19, 1930; No. 303,152, Aug. 19, 1930

FOR LONG LIFE INDUSTRIAL FLOORS

A permanently smooth, quiet, non-skid surface. Cracks and holes cannot develop

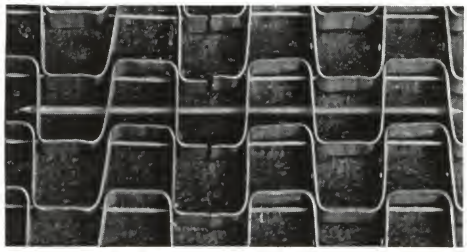
Acme Heavy-Duty Floorsteel

Acme Floorsteel provides long-life floors at low cost.
(1) The flexible grid is easy to lay.
(2) The surface is quiet and non-skid.
(3) Exposed steel edges bear the load.
(4) Cracks, holes, and ruts cannot develop.
(5) Floor is permanently smooth and even.
(6) Maintenance costs are practically eliminated.

Floor Structure—Acme Floorsteel is embedded flush with the top in concrete and asphalt floors, and literally provides a network of steel rails for truck wheels. Two or more of these rails are at all times supporting each wheel.

The small mesh in combination with the light section of rolled steel members makes a permanently smooth and quiet floor. Under the heaviest trucking the exposed edges of the steel ribs become slightly mushroomed, presenting an increased area of steel in the surface. This protects the material next to the rib and prevents shattering.

Delivered on the job in easily handled rolls



Small mesh and light section of steel—an outstanding advantage of Acme Floorsteel

Sizes—Depths ⅝ and ¾ in.

Mesh 1¼x1¼ in.; made of strip steel .065 in. thick.

Stock sizes 47½, 60 and 72½ in. wide, 25 ft. long in ⅝-in. depth.

Special widths in ⅝ in. and ¾ in. made to order (at no additional charge) in multiples of 2½ in., up to 72½ in. Lengths as desired.

The flexible grid is easy to lay. Large sections are joined into one continuous mat

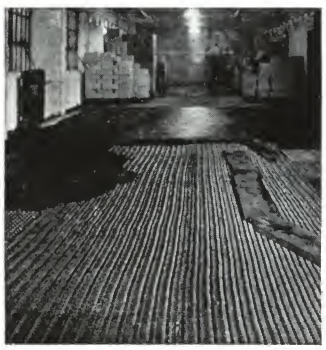
For New or Old Floors—Acme Floorsteel is practical for armoring of new or old floors and truckways. It is used in combination with concrete or asphalt mastics to resurface concrete floors, and under certain conditions it can be used to resurface wood floors when filled with a mastic.

Laying New Floors—Acme Floorsteel is rolled out on the base course or sub-floor in large sections which are joined by pins and wires into one continuous mat. Filling material is then placed and troweled.

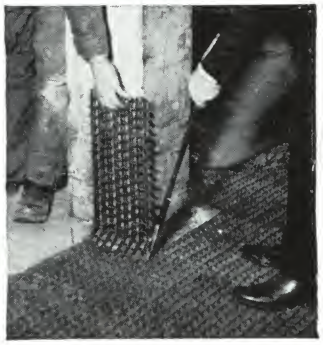
Repairing Old Floors—Repairing an old floor is a simple matter with Acme Floorsteel. When used over old concrete or brick, the floor should be previously prepared by filling holes, or uneven worn spots and cracks with a suitable grout. An asphalt bond coat is applied, and the Acme Floorsteel laid in the usual manner with mastic used for the filling material.

When used over wood the laying of Acme Floorsteel should be done with the operations above described. In addition, the Floorsteel must be fastened to the base by means of Acme Floorsteel Anchors provided for this purpose.

Fitting—Fitting Acme Floorsteel around an obstruction is easily and quickly done by cutting the steel on one side and pulling two wires.



Any old industrial floor quickly resurfaced with Acme Floorsteel



Special snips are loaned when trimming is necessary

FOUNDED 1849

SNEAD & COMPANY

Gray Iron Self-anchoring Armor Grids for Concrete and Asphalt Floors

(PATENTED)

TELEPHONE
DElaware 3-3500

207 Pine Street, JERSEY CITY, N. J.

For Snead Library Equipment and Partitions, see File Index

Snead Armored Floors Never Need Repairs

In America's leading industries, wherever floors are subjected to rough use and abuse, Snead Armor Grids have permanently eliminated all floor repairs and delays. After 26 years of gruelling punishment, not a single installation of Snead Armor Grids has ever had to be repaired or replaced. A Snead Armored floor is a permanent source of pride and profit.

Durable—Snead Armor Grids absorb severe shocks from dropped objects, and carry heavy rolling and sliding traffic quietly. They permanently protect aisles, driveways, elevator entrances, ramps, platforms, cold storage rooms and other areas which otherwise would require frequent repair and replacement. The grids are cast of tough *Durum Iron which has superior moisture and acid corrosion resisting properties.* Their granular side walls bond inseparably with the concrete or mastic in which they are imbedded, and form a single homogenous mass, permanently secure against dusting, spalling, seepage, rusting, rutting or loosening. No surface treatments are ever required. The floor actually improves with use.

Non-skid—Economical—The pleasing symmetrical pattern covers 41% of the total area with armor, and provides a skid-proof, yet smooth-running surface in all directions. Snead Grids displace 21% of the finished aggregate, producing an important saving in material.

Easy to Install—Snead Armor Grids are quickly installed either in new locations or right over old worn floors. No expensive assembling, anchoring or fastening devices are required.

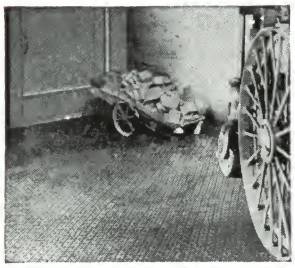
Our engineers will study your needs and submit recommendations and samples without obligation.

Snead Armor Grids Meet These Important Industrial Floor Requirements

1—Permanent—Non-dusting—Quiet
2—Offer Minimum Resistance to Traffic
3—Afford Good Traction Under All Conditions
4—Protect Concrete or Mastic
5—Withstand Shocks, Temperature Changes
6—Impervious to Acid, Moisture
7—Good Appearance and Easy to Clean
8—Inexpensive to Install and Maintain

Some industries in Which Snead Grids Are Used

Automobile Plants
Brewing and Distilling
Chemical Industries
Cold Storage Plants, Warehouses
Dairies and Creameries
Food Products and Canning
Hardware and Metal Products
Ice Cream Manufacturing Plants
Laundries, Institutions, Hotels
Paper, Printing, Publishing
Railroads, Public Service, etc.
Rubber Products, Textile Plants



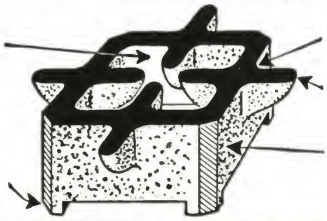
Dropped castings, heavy traffic, temperature changes, moisture, etc., provide ample evidence of durability of Snead armored floors.

Snead Grids cover 41% of total surface. Provide perfect traction in all directions for small and large truck wheels.

FIVE SUPERIOR FEATURES OF SNEAD ARMOR GRIDS

Small symmetrical openings permit rolling any sliding traffic in all directions, without wearing out floor material

Pedestals provide automatic means of leveling, and allow floor material to flow under and interconnect all pockets



All corners rounded. No acute angles. No thin fins to break

Projecting ribs hold down floor material and prevent spreading

Roughened and tapered side walls bond perfectly with floor material without special anchoring devices

No. 10 Lightweight Armor

No. 30 Heavy Duty Armor

SPECIFICATIONS FOR INSTALLING SNEAD ARMOR GRIDS

Over Concrete Base

Base shall be brought to a true and even surface exactly the depth of the grid below the finished floor level. When the slab has set enough to hold the weight of the grids flow on a surface coat of rich 1:2 mix using clean, sharp sand; press the grids into the mix until they rest firmly on the slab. (Specify whether grids shall be laid in straight rows or staggered or laid herringbone). Grids shall be pressed into the surface coat until the mix squeezes through the openings at the top; excess grout shall be screeded off and given a trowel finish, leaving the concrete flush or about $\frac{1}{16}$ in. higher than the iron.

In Asphalt Over Concrete

Prepare base slab as described above. Then apply a hot mix of asphalt mastic not less than 350° F .with no particles of aggregate over ¼ in. in diameter Grids shall be pressed into the asphalt mastic until they rest firmly on the slab. Asphalt shall be brought $\frac{1}{16}$ or ⅛ in. over grids and a second rubbing shall be given after filling with clean, sharp sand.

In Asphalt Over Wood Floors

Floor boards shall be laid close and securely nailed to bearings, which should not be over 16 in. on centers. All loose knots and knot holes shall be covered with sheet metal. Over this lay two thicknesses of waterproof felt. Then proceed as described in preceding paragraph.

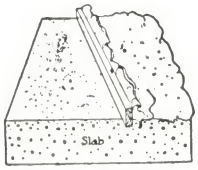
DIMENSIONS, WEIGHTS AND DISPLACEMENT

Grid No.	Rib depth, in.	Over-all depth, in.	Rib thickness, surface, in.	Rib spacing, c. to c., in.	Openings, in.	Weight approx., lb.
10 Lightweight	½	⅝	¼	2⅛	¾	10
15 Medium duty	¾	1	¼	2⅛	¾	15
20 General purpose	1	1¼	¼	2⅛	¾	20
30 Heavy duty	1¼	1¾	⅜	2⅞	1	30

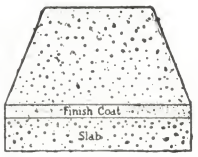
Width, 12 in. Length, 24 in.
Area, 2 sq. ft.
Effective armor, 41% total area.
Finished aggregate displaced, 21%.

Note: Any grid can be shaped for odd-dimensioned areas, drains, etc., with a hack saw, cold chisel and hammer.

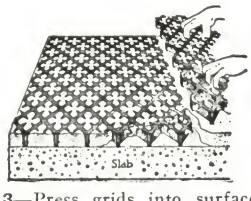
How to Install Grids in Concrete



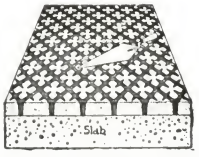
1—Screed off slab to true level surface, exact depth of grid below finished floor level



2—When slab or leveling coat has partially set, flow on surface coat of rich 1:2 mix made with fine sharp sand



3—Press grids into surface coat matching pattern and allowing ⅛-in. clearance between grids. Bottom grids firmly on slab



4—Screed off excess grout, float in thoroughly to fill all voids and trowel smooth. Finished grout should be flush with, or about $\frac{1}{16}$ in. higher than, top surface of grid

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- SECTION - 12

Section Number 1/5 Catalog Number

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SECTION 12

THE BESSLER DISAPPEARING STAIRWAY CO.

AKRON, OHIO

BESSLER DISAPPEARING STAIRWAYS IN WOOD AND STEEL

Model 35

Models 35 and 45 are very similar in operation and construction, except Model 45 is made for a wider finished opening. Both are equipped with a spring drum attached to each jamb bracket to raise the panel and hold it in a closed position. A spring drum attached to the metal frame located under the stringers assists the operator in sliding the stringers over panel.

Model 60

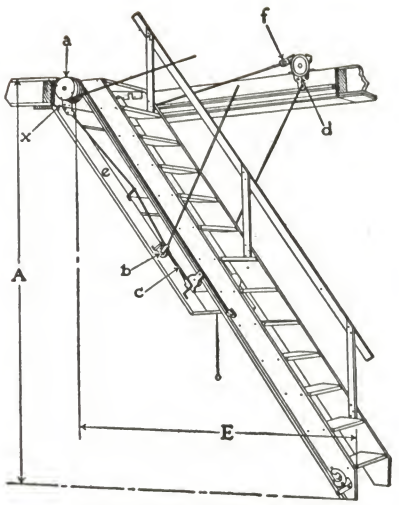
Models 50 and 60 are very similar in operation and construction, except Model 60 is made for a wider finished opening. Both are equipped with a spring drum on each side of stairway. The cables attached to these drums are arranged so they will assist the operator in sliding stringers over panel also raise the panel and hold it in that position.

Model 75

This is one of our latest improved stairways equipped with 1⅛-in. panel for a finished opening 2 ft. 6 in. wide. Length of opening varies according to floor to floor height. It has four spring drums, two of these are installed on jambs to operate the panel and the other two are at the hinged end of opening and assist the operator in sliding the stairway over panel.

Model 89

This is one of the heavier models. The panel is 1⅛ in. for a finished opening 2 ft. 6 in. wide. Length of opening varies according to floor to floor height. It has two spring barrels and two spring drums all located at hinged end of opening. One assists the operator in sliding stringers over panel and the other raises panel and holds it in that position. A lug on each outside cable strikes against sheave wheel on jamb bracket when stairway is opened and holds it to the correct run.



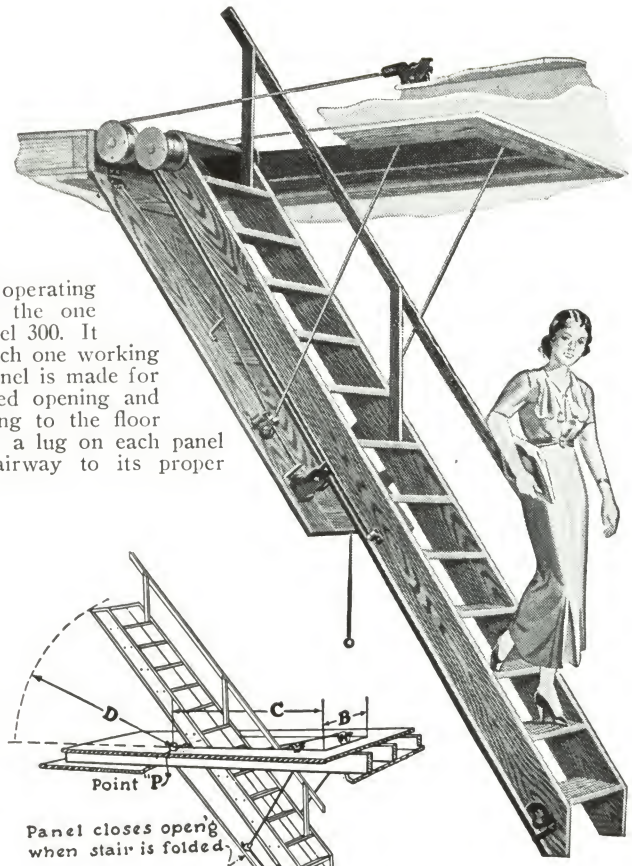
Stairway in Position for Use

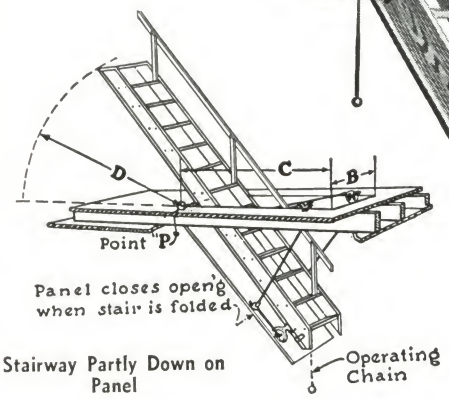
Key for Models 89, 97 and 300

a—Spring drums
b—Cable holders
c—Equalizing bars
d—Pulley brackets
e—Stair panel
f—Lugs
x—Trimmer

Model 97

The new improved Model 97 stairway has an operating machine very similar to the one used on the all-steel Model 300. It has four spring drums, each one working separately. The 1⅛-in. panel is made for a 2 ft. 6 in. wide finished opening and the length varies according to the floor to floor height. There is a lug on each panel cable that holds the stairway to its proper run.



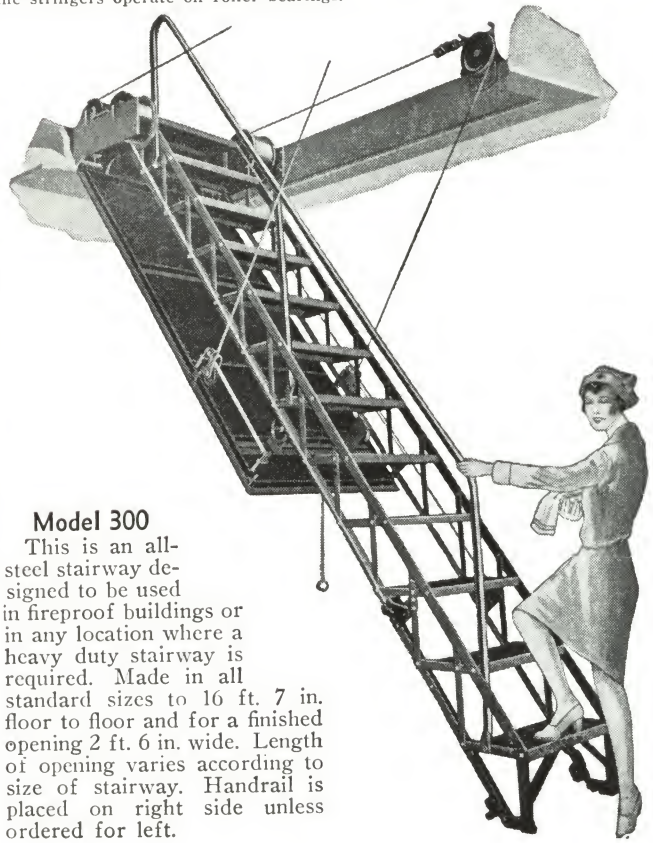


Stairway Partly Down on Panel

DIMENSIONS FOR VARIOUS FLOOR TO FLOOR HEIGHTS

A—Height from floor to floor	B—Width of finished opening between jambs	C—Length of finished opening between jambs	D—Dimension from upper end of stair stringer to point "P"	E—Distance from front edge of stair stringer to finished jamb
Models 35 and 50				
7′ - 7″	2′ - 0″	5′ - 6″	4′ - 10″	5′ - 6″
8′ - 1″	2′ - 0″	5′ - 6″	5′ - 3 ″	5′ - 10″
8′ - 7″	2′ - 0″	5′ - 6″	5′ - 7 ″	6′ - 2″
9′ - 1″	2′ - 0″	5′ - 6″	5′ - 11″	6′ - 6″
9′ - 7″	2′ - 0″	6′ - 0″	6′ - 6 ″	6′ - 10″
10′ - 1″	2′ - 0″	6′ - 0″	6′ - 10″	7′ - 2″
10′ - 7″	2′ - 0″	6′ - 0″	7′ - 1 ″	7′ - 6″
Models 45 and 60				
7′ - 7″	2′ - 6″	5′ - 6″	4′ - 10″	5′ - 6″
8′ - 1″	2′ - 6″	5′ - 6″	5′ - 3 ″	5′ - 10″
8′ - 7″	2′ - 6″	5′ - 6″	5′ - 7 ″	6′ - 2″
9′ - 1″	2′ - 6″	5′ - 6″	5′ - 11″	6′ - 6″
9′ - 7″	2′ - 6″	6′ - 0″	6′ - 6 ″	6′ - 10″
10′ - 1″	2′ - 6″	6′ - 0″	6′ - 10″	7′ - 2″
10′ - 7″	2′ - 6″	6′ - 0″	7′ - 1 ″	7′ - 6″
Model 75				
7′ - 7″	2′ - 6″	5′ - 10″	4′ - 6″	5′ - 6″
8′ - 1″	2′ - 6″	5′ - 10″	4′ - 11″	5′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	5′ - 3″	6′ - 2″
9′ - 1″	2′ - 6″	5′ - 10″	5′ - 6″	6′ - 6″
9′ - 7″	2′ - 6″	6′ - 0″	6′ - 4″	6′ - 10″
10′ - 1″	2′ - 6″	6′ - 0″	6′ - 6″	7′ - 2″
10′ - 7″	2′ - 6″	6′ - 0″	7′ - 0″	7′ - 6″
Model 89				
7′ - 7″	2′ - 6″	5′ - 10″	4′ - 4″	6′ - 5″
8′ - 1″	2′ - 6″	5′ - 10″	4′ - 11″	6′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	5′ - 7″	7′ - 3″
9′ - 1″	2′ - 6″	6′ - 0″	6′ - 2″	7′ - 7″
9′ - 7″	2′ - 6″	6′ - 4″	6′ - 4″	8′ - 0″
10′ - 1″	2′ - 6″	6′ - 8″	6′ - 8″	8′ - 4″
10′ - 7″	2′ - 6″	6′ - 11″	7′ - 1″	8′ - 9″
Models 97 and 300				
7′ - 7″	2′ - 6″	5′ - 10″	5′ - 2″	6′ - 5″
8′ - 1″	2′ - 6″	5′ - 10″	5′ - 9″	6′ - 10″
8′ - 7″	2′ - 6″	5′ - 10″	6′ - 5″	7′ - 3″
9′ - 1″	2′ - 6″	6′ - 0″	7′ - 0″	7′ - 7″
9′ - 7″	2′ - 6″	6′ - 4″	7′ - 2″	8′ - 0″
10′ - 1″	2′ - 6″	6′ - 8″	7′ - 6″	8′ - 4″
10′ - 7″	2′ - 6″	6′ - 11″	7′ - 11″	8′ - 9″
11′ - 1″	2′ - 6″	7′ - 3″	8′ - 4″	9′ - 2″
11′ - 7″	2′ - 6″	7′ - 6″	8′ - 7″	9′ - 6″
12′ - 1″	2′ - 6″	7′ - 9″	8′ - 11″	9′ - 10″
12′ - 7″	2′ - 6″	8′ - 1″	9′ - 3″	10′ - 3″
13′ - 1″	2′ - 6″	8′ - 4″	9′ - - 7″	10′ - 8″
13′ - 7″	2′ - 6″	8′ - 8″	9′ - 11″	11′ - 0″
14′ - 1″	2′ - 6″	9′ - 0″	10′ - 3″	11′ - 5″
14′ - 7″	2′ - 6″	9′ - 3″	10′ - 6″	11′ - 9″
15′ - 1″	2′ - 6″	9′ - 6″	11′ - 1″	12′ - 3″
15′ - 7″	2′ - 6″	9′ - 9″	11′ - 7″	12′ - 10″
16′ - 1″	2′ - 6″	10′ - 1″	11′ - 11″	13′ - 1″
16′ - 7″	2′ - 6″	10′ - 5″	12′ - 4″	13′ - 4″

The main bearings on Models 89, 97 and 300 are brass bushed and the stringers operate on roller bearings.



Model 300

This is an all-steel stairway designed to be used in fireproof buildings or in any location where a heavy duty stairway is required. Made in all standard sizes to 16 ft. 7 in. floor to floor and for a finished opening 2 ft. 6 in. wide. Length of opening varies according to size of stairway. Handrail is placed on right side unless ordered for left.

CENTRAL WIRE AND IRON WORKS

Patented "Ever-Ready" Steel Stairs

309 Gratiot Street, ST. LOUIS, MO.

Products

"Ever-Ready" Steel Stairs.
Also Fire Escapes and Ornamental Iron Work.

Outstanding Features of Our Improved "Ever-Ready" Steel Stairs

(1) Used as an immediate service stair during construction of building.
(2) Attractive, practical and less costly than the old method of construction.
(3) The separate nosing is of much heavier gauge material than generally used for treads and risers.
(4) Easily broom-cleaned before tread filler is applied.
(5) Speed of erection is accelerated.
(6) Minimizes accidents.
(7) Nosing is slid into place in much the same manner that safety treads are now set when applying the filler, and with no greater effort or expense.
(8) Nosings are not damaged as is often the case with nosings fixed on stairs at the factory.
(9) Requires no temporary tread filler of planks or other substances.
(10) Furnished in large sections ready to set in place.
(11) Steel newels, with cast caps and pendants, may be paneled and are more modern than the newels ordinarily used in general stair construction.
(12) Newels in our construction serve only as railing stops.
(13) Stairs are supported on floors and platforms—not dependent on support by newels.

Specifications

Stairs—Shall be of the "Ever-Ready" type of construction as manufactured by the Central Wire and Iron Works, St. Louis, Mo., and as illustrated in Sweet's Catalog File—Architectural, and designed to carry a live load of 125 lbs. per sq. ft., arranged for concrete fill 1¾ in. thick furnished by others.

Stringers—Shall be not less than $\frac{3}{16}$-in. steel plate bent in channel form 10 in. or more in width. Exposed or face strings to have wrought iron mouldings at top and bottom flanges riveted to strings. All exposed rivets on face strings to be countersunk.

Treads and Risers—Of interlocking construction, not less than No. 13 blue annealed steel with separate interlocking nosing of No. 10 gauge with punched lugs 1 in. long, spaced 10 to 12 in. on centers, to engage in corresponding slots punched in treads.

Nosings—To be attached (slid into place) at time of inserting the fill by Contractor for that material. (See details.)

Platforms and Landings—Where required, shall be No. 12 or No. 13 steel supported on angle frames riveted to stringers and reinforced with tees not more than 2 ft. on centers. Where stair walls are not of bearing kind, struts or hangers are to be supplied.

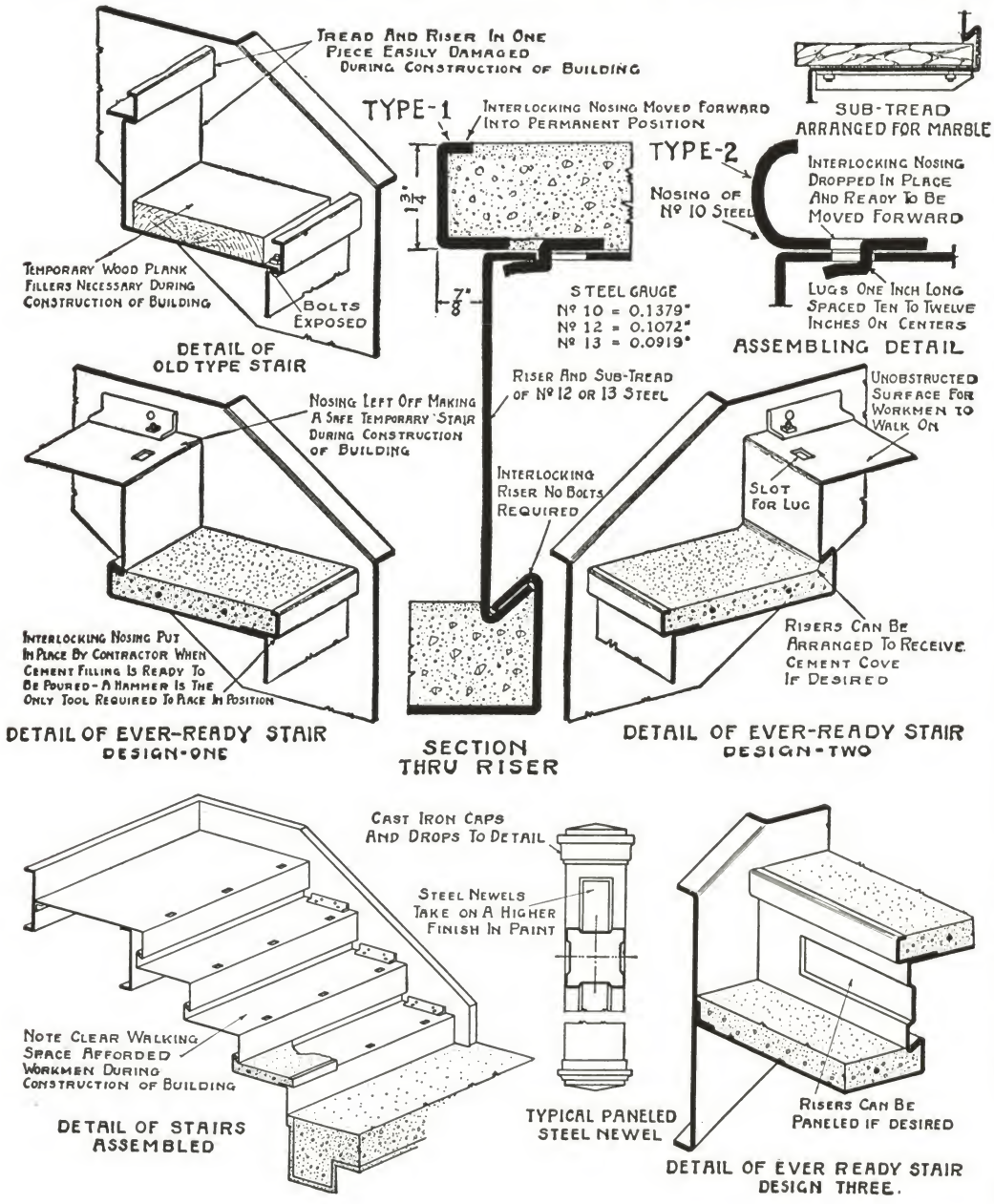
Newels—Of No. 12 blue annealed steel with sunken panels and cast iron caps and pendants as shown.

Railings—To be of design shown on drawings, top channels punched to receive wood hand rails supplied by others.

Painting—The entire stairwork to receive a coat of shop paint, except that part of treads where concrete fill is used.

Estimates

Send plans or sketches and we will gladly furnish preliminary estimates promptly.



FOUNDED 1850

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

Jones & Laughlin Building
PITTSBURGH, PA.

For Sales Offices, Warehouses and Fabricating Works, see pages on Tubular Products

Products

J & L LIGHTWEIGHT CHANNELS for Stair Stringers and other uses.

Also J & L Structural Shapes and Fabricated Structural Work, Columns, Girders, Trusses, Plate Work, Tanks, Mill and Factory Buildings; J & L Wire Products; J & L Bars for Concrete Reinforcement.

For J & L Junior Beams, and Tubular Products, see page numbers in File Index.

Description of J & L Lightweight Channels

J & L Lightweight Channels are produced on modern rolling mills and are similar in type to standard channel sections.

They have constant dimensions, making fabricating and fitting to other work economical.

J&L STEEL

Due to the rolled shape, the material is ready, as received, for fabrication into various uses, including stair stringers, thereby saving time.

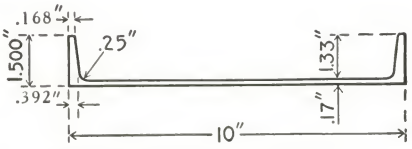
The rolled shape also reduces to the minimum shop equipment for fabrication. J & L Lightweight Channels are economical in weight and form a strong structure.

The lines are straight and true, resulting in proper fitting at the joints, thus making a well-finished installation.

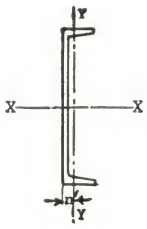
These sections are now available in two sizes: 10 in. 8.4 lb. per ft. and 12 in. 10.6 lb. per ft.

J & L Lightweight Channels are available for immediate shipment from the following points: Chicago, Cincinnati, New Orleans, New York, Pittsburgh and Detroit. Carried in lengths of 20, 25, 30, 40 and 50 ft.

Typical Installation



Dimensions above are for C-752
See table below for C-700



DIMENSIONS

Section index	Depth of channel, in.	Wt. per ft., lbs.	Flange width		Web thickness	
			Inch and decimal parts	Inch and fractional parts	Decimal parts of inch	Fractional parts of inch
C-752	10	8.4	1.500	1½	.170	11/64
C-700	12	10.6	1.500	1½	.190	3/16

FUNCTIONS OF SECTIONS

Area, sq. in.	Axis X-X (perpendicular to web)			Axis Y-Y (parallel to web)			
	I	S	r	n′	S′	r′	I′
2.47	32.3	6.5	3.61	0.29	0.28	0.37	0.33
3.12	55.8	9.3	4.23	0.27	0.32	0.35	0.39

ALLOWABLE LOADS

	Index No.	Depth of channel, in.	Wt. per ft., lbs.	Bend mom., ft. lbs.	Max. load	Span, feet																								
						2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Fiber Stress, 18,000 Lbs. per Sq. In.																														
Total load in thousands of pounds	C-752	10	8.4	9680	40.8	38.7	25.8	19.4	15.5	12.9	11.1	9.7	8.6	7.7	7.0	6.5	6.0	5.5	5.2	4.8	4.6	4.3	4.1	3.9	3.7	3.5	3.4	3.2	3.1	3.0
Total deflection, in.						.007	.017	.030	.047	.067	.091	.119	.151	.186	.225	.268	.315	.365	.419	.477	.538	.603	.672	.745	.821	.901	.985	1.073	1.164	1.259
Total load in thousands of pounds	C-700	12	10.6	13947	54.7		37.2	27.9	22.3	18.6	15.9	13.9	12.4	11.2	10.1	9.3	8.6	8.0	7.4	7.0	6.6	6.2	5.9	5.6	5.3	5.1	4.9	4.6	4.5	4.3
Total deflection, in.						.006	.014	.025	.039	.056	.076	.099	.126	.155	.188	.223	.262	.304	.349	.397	.449	.503	.560	.621	.684	.751	.821	.894	.970	1.05
Load in lbs. per lin. ft. of channel	C-752	10	8.4			19360	8604	4840	3098	2151	1580	1210	956	774	640	538	458	395	344	303	268	239	215	194	176	160	146	134	124	115
	C-700	12	10.6				12398	6974	4463	3100	2277	1743	1378	1116	922	775	660	569	496	436	386	344	309	279	253	231	211	194	179	165
Fiber Stress, 20,000 Lbs. per Sq. In.																														
Total load in thousands of pounds	C-752	10	8.4	10756	40.8		28.7	21.5	17.2	14.3	12.3	10.7	9.6	8.6	7.8	7.2	6.6	6.1	5.7	5.4	5.1	4.8	4.5	4.3	4.1	3.9	3.7	3.6	3.4	3.3
Total deflection, in.							.019	.033	.052	.074	.101	.132	.168	.207	.250	.298	.350	.406	.466	.530	.598	.670	.747	.828	.912	1.00	1.09	1.19	1.29	1.40
Total load in thousands of pounds	C-700	12	10.6	15497	54.7		41.3	31.0	24.8	20.7	17.7	15.5	13.8	12.4	11.3	10.3	9.5	8.9	8.3	7.7	7.3	6.9	6.5	6.2	5.9	5.6	5.4	5.2	5.0	4.8
Total deflection, in.							.016	.028	.043	.062	.084	.110	.140	.172	.209	.248	.291	.338	.388	.441	.498	.559	.622	.690	.760	.834	.912	.993	1.08	1.17
Loads in lbs. per lin. ft. of channel	C-752	10	8.4				9556	5375	3440	2389	1755	1344	1062	860	711	597	509	439	382	336	298	265	238	215	195	178	163	149	138	127
	C-700	12	10.6				13778	7750	4960	3444	2531	1937	1531	1240	1025	861	734	633	551	484	429	383	343	310	281	256	234	215	198	183

Note: Loads above dotted lines will produce maximum allowable shear in webs; loads above solid lines will produce excessive deflections.

THE ORNAMENTAL IRON WORK COMPANY

Stairways and Railings

929 Sweitzer Avenue
SOUTH AKRON, OHIO

REPRESENTATIVES

ALBANY, N. Y., Builders Agency Co.
BALTIMORE, MD., Consolidated Supply Co.
BOSTON, MASS., Waghorne-Brown Co.
CHARLESTON, W. VA., Fireproof Products Co.
CHICAGO, ILL., Leo Rosenberg
CINCINNATI, OHIO, Al Levinson Co.
COLUMBUS, OHIO, Henry P. Howe Co.
DAYTON, OHIO, John G. Poole Co.
DES MOINES, IOWA, Des Moines Stair Co.
ERIE, PA., Geo. H. Kraft & Son
NEW YORK, N. Y., James P. Foraker
PHILADELPHIA, PA., Jas. Clancy
PITTSBURGH, PA., E. A. Butts
PORTSMOUTH, OHIO, Earl C. Hayes
POUGHKEEPSIE, N. Y., Hudson Valley Builders Steel Co.
WASHINGTON, D. C., O. J. Condon
WHEELING, W. VA., W. E. Britt Co.

33 YEARS OF STAIR-MAKING EXPERIENCE

The Ornamental Iron Work Company is pleased to offer to architects and owners the benefit of their experience in designing building stairs of all types, from any material—particularly steel, bronze, aluminum, benedict nickel or stainless steel.

SERVICE TO ARCHITECTS

We will be glad to furnish to registered architects typical details or suggested designs pertaining to any type of stair problem. Our representatives will be pleased to assist in the preparation of specifications for any work in their territory.

KLIP-LOK STEEL STAIRS

A New and Improved Design

KLIP-LOK

IT LOCKS

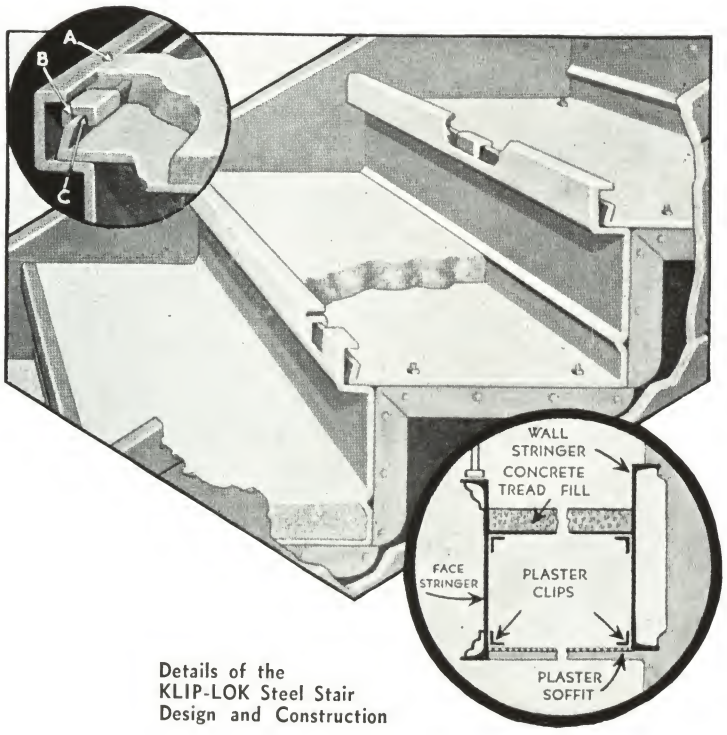
U. S. Patent No. 1,835,759
Canadian Patent No. 331,888

Klip-Lok stairs embody the new streamline tendency in design with a greatly increased factor of safety.

INTERLOCKING TREADS

The clean, unmarred surface of Klip-Lok stairs is obtained by concealing the fastening devices within the nosings.

This new and improved design provides an interlocking tread and riser which holds the nosing rigid, and prevents separation from the fill at joint "A" (see accompanying illustration).



Details of the KLIP-LOK Steel Stair Design and Construction

NOSING STRENGTH ASSURED

Klip-Lok nosings are reinforced by the upturned flange on the front of each tread. The flange engages with the new style Klip "B" as indicated at "C."

By this construction, nosing failure is entirely eliminated, a point of vital interest to architects and owners.

INCREASED SAFETY

The extra strength developed by the use of these Klips permits a much narrower lip on the tread nosing, thereby minimizing the danger of slipping.

IMPORTANT ADVANTAGES OF KLIP-LOK STAIRS

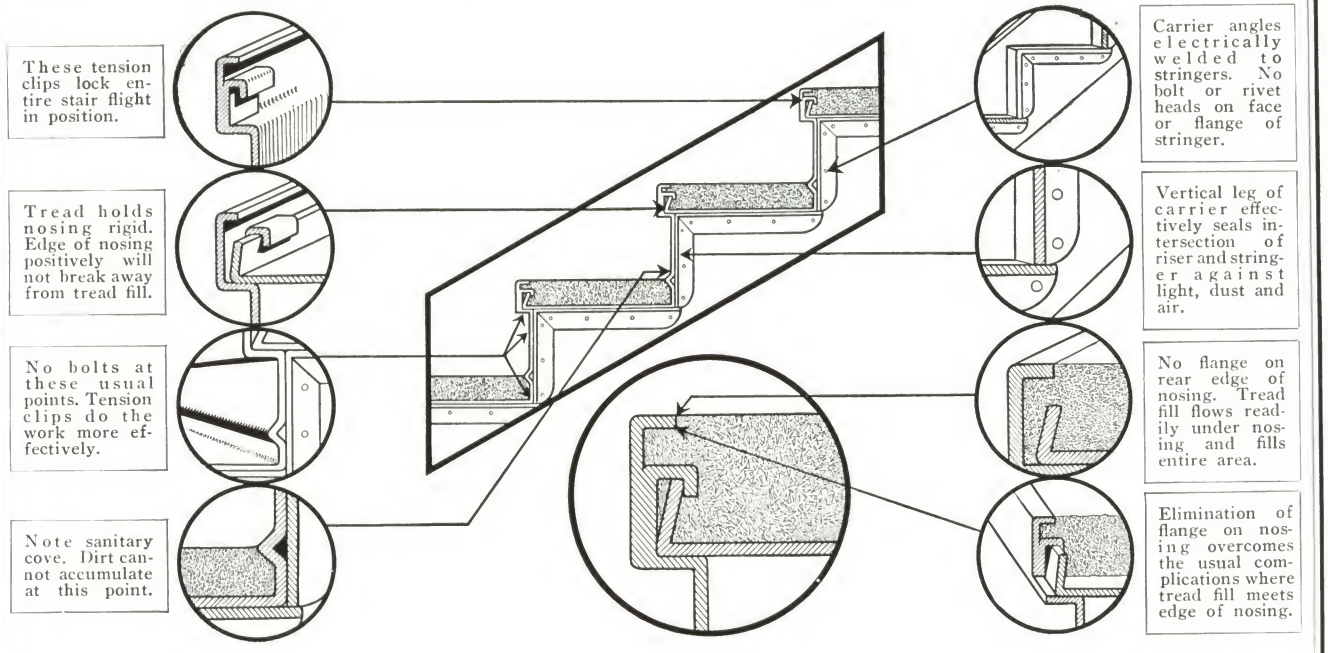
Klip-Lok stairs are *easily erected at less cost,* have fewer parts, and all treads are interchangeable. Mastic, cement, or other types of tread fill are easily applied, since there are no obstructing flanges on the nosing. Klip-Lok stairs are:

(1) **Simpler in Design**—Three "Klips" perform the service of seven bolts in each individual tread and riser. Fewer holes reduce the possibility of error, *an important advantage from an erection standpoint.*

(2) **Stronger in Construction**—Tread utilized to support the nosing — tests conducted at the University of Akron Engineering College demonstrate the amazing strength of this new construction.

(3) **Safer in Service**—Reinforced nosing held rigid at point where fill meets nosing. Treads can never work loose, because they are locked into nosing.

(4) **Smarter in Appearance**—The complete elimination of bolt heads and other structural blemishes produces a clean smart looking stair. Narrower lip on nosing adds to appearance of treads. Other improved points of construction are incorporated in standard details, prints of which will be mailed to registered architects upon request.



IMPORTANT CONSTRUCTIONAL FEATURES OF KLIP-LOK STAIRS

KLIP-LOK STAIR SPECIFICATION

All *stairs* shall be of Klip-Lok tread and riser construction as manufactured by the ORNAMENTAL IRON WORK COMPANY, South Akron, Ohio.

Stringers—Shall be J & L light weight channels. Face stringer to be neatly finished with moulding as shown. Where stringer connects to newel, moulding shall be neatly returned to form a paneled effect. Stringer connections must be concealed; no exposed angle or lug connections will be permitted. Carriage angles shall be electrically spot-welded to stringers; no rivets or bolt holes to show on face of string.

Treads and Risers—Shall be one continuous piece of blue annealed sheet steel (gauge dependent on span), and shall be formed into shape to provide sanitary cove and Klip-Lok type of interlocking nosing. Risers must be drawn tightly against vertical leg of carriage angles.

Nosings—Shall be so constructed that flange on tread shall engage tightly with Klips welded to inner faces of nosings.

Platform Landings—Shall have wall stringer around entire platform. Angle or tee iron reinforcings must be supported by cast or forged pockets bolted or welded to stringers. Nosings of platforms must be reinforced in same manner as tread nosings.

Newels—Shall be 4 x 4 pressed steel with neatly rounded corners. (Or of type and style shown on details.)

Balustrades—Shall be ½-in. square bars, 4 in. on centers, electrically welded into top and bottom channel. (Or of type and style shown on details.)

Plaster Clips—Shall be attached to stringers, one at each tread. (If stair is to have plastered soffit.)

General Conditions—Shop details shall be furnished architect through the contractor. Malleable iron wall rail brackets shall be spaced 5 ft. on centers and securely fastened to the wall. Pipe railings shall be 1½-in. standard black pipe with standard fittings. All stairs to be painted one shop coat of paint. Contractor must guarantee stairs against material defect for one year and to carry a load of not less than 125 lbs. per sq. ft. with safety factor of 4 at all times.

MEMORANDA

AMERICAN ABRASIVE METALS CO., IRVINGTON, N.J.

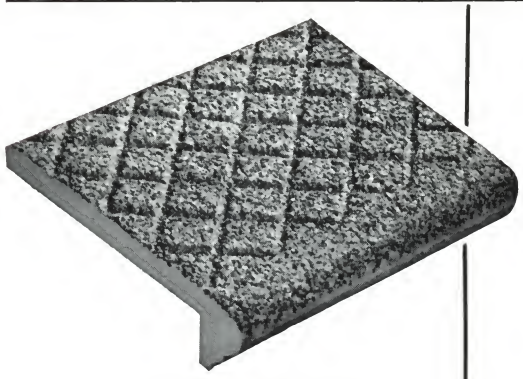
Safety!

WITH Feralun Treads

Feralun Safety Treads

3 TYPES OF SURFACES
4 TYPES OF METAL BASES

- **FERALUN** — *An Iron Base*
- **BRONZALUN** — *A Bronze Base*
- **ALUMALUN** — *An Aluminum Base*
- **NICALUN** — *A Nickel Bronze Base*



HATCHED SURFACE

PLAIN SURFACE

FLUTED SURFACE

Purpose

FERALUN is a safety tread which prevents slipping on stairs and other walkway surfaces. More people are protected by Feralun than by all other types or makes of safety treads combined.

Description

Feralun consists of a special iron casting in the walking surface of which is uniformly embedded a *slip-preventing* and *wear-resisting* abrasive material. The abrasive material slightly projects above the wearing surface, including the nosing of the stair tread, the point of greatest wear. A firm grip is thus assured to the foot whether the surface is wet, oily or dry.

Three surfaces are furnished—*hatched, plain* or *fluted* as illustrated. Since the non-slip properties, however, are due entirely to the abrasive material, one surface is as efficient as another.

Depending on the architectural effect desired, three metal bases other than Feralun are manufactured.

BRONZALUN—a bronze base, ALUMALUN—an aluminum base, and NICALUN—a nickel bronze base. In every feature, except the metal, they are exactly like Feralun.

Economy of Use

Because of long wear no repairs are ever required under normal wearing conditions. Feralun eliminates accidents, damage suits are avoided and compensation rates are reduced.

Uses and Index

1. Concrete Stairs—See page 8, Plates 1 and 2.
2. Structural Stairs—See pages 8 and 9, Plates 3, 4 and 5.
3. Door Thresholds—See page 10, Plates 9 and 10.
4. Floor Plates—See page 10, Plate 11.
5. Spiral Stairs—See page 9, Plate 6.
6. Elevator Sills—See page 9, Plates 7 and 8, and page 12.
7. Repairs—See page 10, Plate 12, and page 11.
8. And generally wherever slipping hazards are present.

Specification

See page 11.

Service

An engineering organization is maintained to answer problems in stairway and floor plate design. Inquiries will be gladly answered and given careful consideration.

FERALUN SAFETY TREADS *in Color* FOR BETTER VISIBILITY

In addition to the extensive line of highly effective safety treads marketed by this company we now introduce something new—an added safety feature that will strongly appeal to architects and building executives.

Color has been added to Feralun and it has improved the appearance of the tread and is in keeping with modern building trends.

The improved visibility is an asset because it reduces slipping hazards. The bright contrasting colors of the Feralun visibility flutes attract the eyes and serve as a warning. It is practical insurance for the owner of the building at a very low cost.

The new aluminized finish is less in cost than Alumalun and prevents rust stains.

Dependable Tread Metals

These new color treads are manufactured in the same standard metals as formerly:

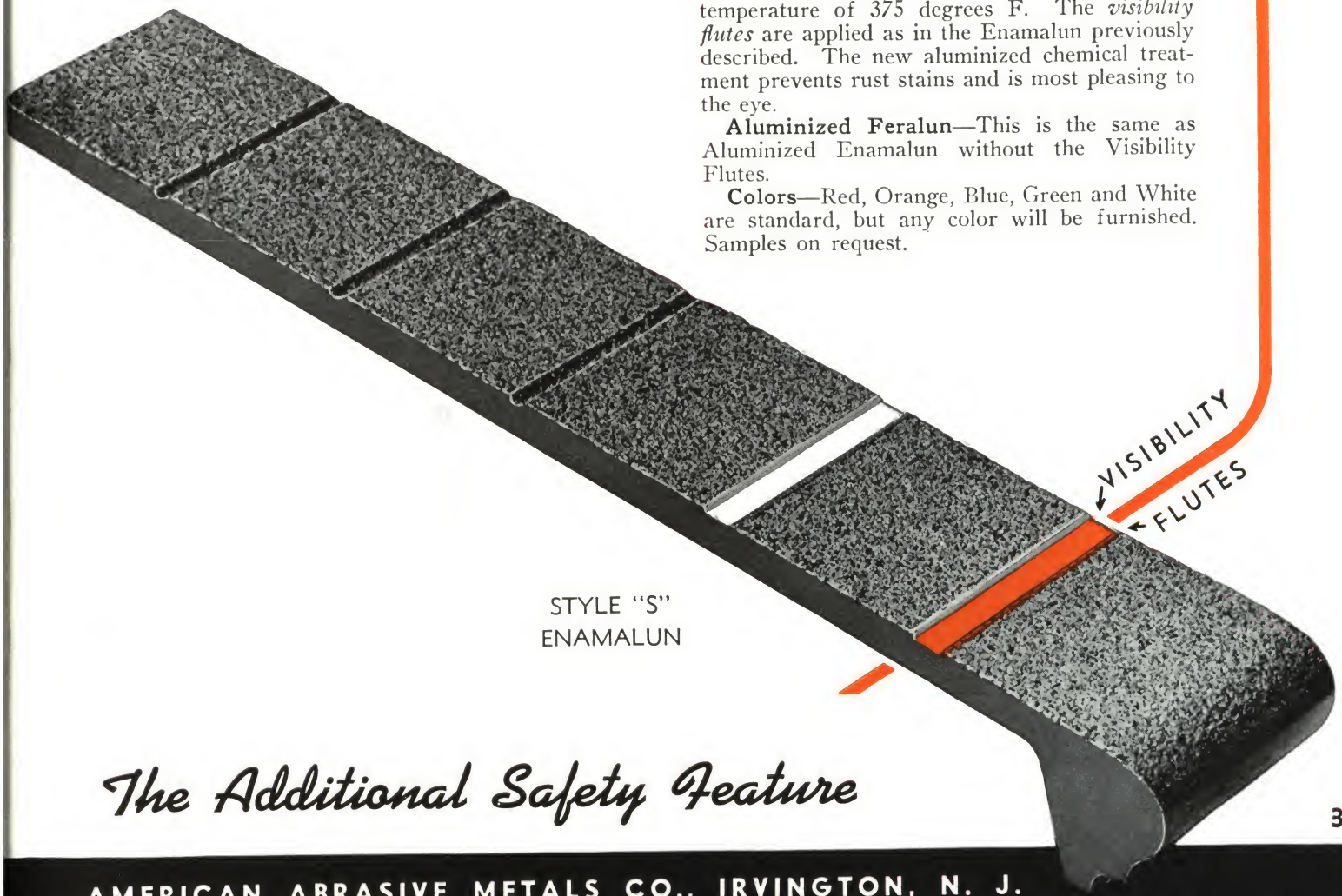
Enamalun—The well-known Feralun Tread with the added safety feature, VISIBILITY FLUTES in orange or in any other color.

The color in the flutes is slightly below the wearing surface of the tread and therefore is not subject to damage. The tread being Feralun, durability and anti-slip efficiency are assured.

Aluminized Enamalun—An attractive new bright finish. The Feralun Tread is subjected to a chemical treatment which impregnates a special aluminum material in the surface, after which it is baked for at least one hour under a minimum temperature of 375 degrees F. The *visibility flutes* are applied as in the Enamalun previously described. The new aluminized chemical treatment prevents rust stains and is most pleasing to the eye.

Aluminized Feralun—This is the same as Aluminized Enamalun without the Visibility Flutes.

Colors—Red, Orange, Blue, Green and White are standard, but any color will be furnished. Samples on request.



STYLE "S"
ENAMALUN

The Additional Safety Feature

AMERICAN ABRASIVE METALS CO., IRVINGTON, N. J.

NEW —SAFETY TREADS WITH VISIBILITY FLUTES IN COLOR

STYLE "A"
ALUMINIZED
ENAMALUN

STYLE "V"
ENAMALUN
(Iron)

ELEVATOR SILL
Also made in aluminum and bronze

Assured Durability

Enamalun treads have been tested on our foundry steps for over two years, where they have been subjected to the most severe wear of gritty abrasives under the impact of heavy foundry workers' shoes. They are still in fine condition.

Aluminized Feralun treads have been installed over a year ago on the stairs of a prominent Philadelphia department store and they are today in excellent condition.

STYLE "T"
ENAMALUN
(Iron)
Also made in aluminum and bronze

How to Specify

To Specify Enamalun—The Anti Slip Treads shall be of cast iron with a hard abrasive uniformly impregnated in the surface and on the nosing edge. Styles, widths and lengths as shown on drawings. Treads to have two *Visibility Flutes* with the enamel slightly below the wearing surface in (specify color). Sample to be submitted for approval.

To Specify Aluminized Enamalun—The Anti Slip Treads shall be of cast iron with a hard abrasive uniformly impregnated in the surface and on the nosing edge, and shall be aluminized and baked. Styles, widths and lengths as shown on drawings. Treads to have two *Visibility Flutes* with the enamel slightly below the wearing surface in (specify color). Sample to be submitted for approval.

To Specify Aluminized Feralun—The Anti Slip Treads shall be of cast iron with a hard abrasive uniformly impregnated in the surface and on the nosing edge, and shall be aluminized and baked. Surface design to be cross hatch (or fluted or plain). Sample to be submitted for approval.

To Specify Visibility Flutes in Other Metals—Safety Treads (or Thresholds, etc.) where indicated shall be made of cast bronze (or aluminum or nickel bronze) with a hard abrasive uniformly impregnated in the surface and on the nosing edge. Styles, widths and lengths as shown on drawings. Treads (or thresholds) to have two *Visibility Flutes* with the enamel slightly below the wearing surface in (specify color). Samples to be submitted for approval.

Special Finishes

Any finish will be applied to any style desired, including elevator sills.

A Modern Touch and Greater Safety

Wide Acceptance

These products are generally recognized as the standard Safety Tread, proven by over 10,000,000 square feet of material installed over a period of twenty-six years.

Among the many distinguished architects and engineers who specify Feralun, Bronzalun, Alumalun and Nicalun, may be mentioned—

Arthur Brown	San Francisco, Calif.
Paul Cret	Philadelphia, Pa.
Holabird & Root	Chicago, Ill.
Albert Kahn	Detroit, Mich.
Mark Lemmon	Dallas, Tex.
McKim, Mead & White	New York, N. Y.
James Gamble Rogers	New York, N. Y.
Stone & Webster	Boston, Mass.

Among Prominent Installations and Users

Empire State Building
Rockefeller Center
Cincinnati Union Terminal
General Motors Co.
The Chicago Tribune
E. I. Du Pont de Nemours & Co., Inc.
Eastman Kodak Co.
The Archives Building, Washington, D. C.
The Department of Commerce Building, Washington, D. C.
The Ford Motor Company
Los Angeles County Hospital
United States Navy
United States Army
Sears, Roebuck & Co.
The New York Times
Harvard University
General Electric Co.

Facts About Feralun

Insurance and Casualty Companies recommend and approve Feralun, Bronzalun, Alumalun and Nicalun.

During a test period there were 141 accidents on a stairway in a prominent railway terminal. Feralun Treads were then installed and a check taken after a similar period of time elapsed showed no accidents had occurred. This is a clear demonstration of the value of Feralun. The stair in question was properly designed and well lighted, and no change was made other than a Feralun installation.

The U. S. Army Engineers found Feralun the effective material for reducing slipping on oily floors.

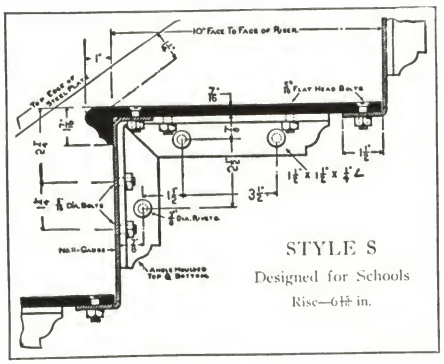
Feralun serves the New York Subways, the Chicago Elevated and the Boston Elevated.

Compensation rates are reduced by the use of Feralun, Bronzalun, Alumalun and Nicalun. Twenty-two chain store organizations specify these products as a protection against slipping on stairs and door thresholds.

Feralun, Bronzalun, Alumalun and Nicalun are produced in the largest plant in the world devoted exclusively to the manufacture of abrasive metals. The originators of Feralun have had twenty-six years of experience, a record unsurpassed in its field. There is no guesswork about Feralun, no unproven statements. Feralun has stood the test of time and is a standard by which other treads are judged. Owning and operating our own plant assures accuracy and uniformity of our products.

Feralun Abrasive Grains—For surfacing new concrete, terrazzo, and composition flooring, to retard slipping and to add longer life. Write for details.

Feralun for Schools



Stairs in schools are in more constant use than in most public buildings. When made of ordinary materials these stairs will wear down, chip on the nosing edge, and become smoother and more slippery the longer they are used. Feralun is proof against all these defects and when once installed will last the life of the building and will be slip-proof.

Feralun Anti-slip Treads were installed in Washington Irving High School, New York, N. Y., in 1913. To date, no accident has been reported and no repairs necessary. The Feralun qualities of safety and durability are easily proved. Inspection of these treads is invited.

Feralun Spiral Stairs

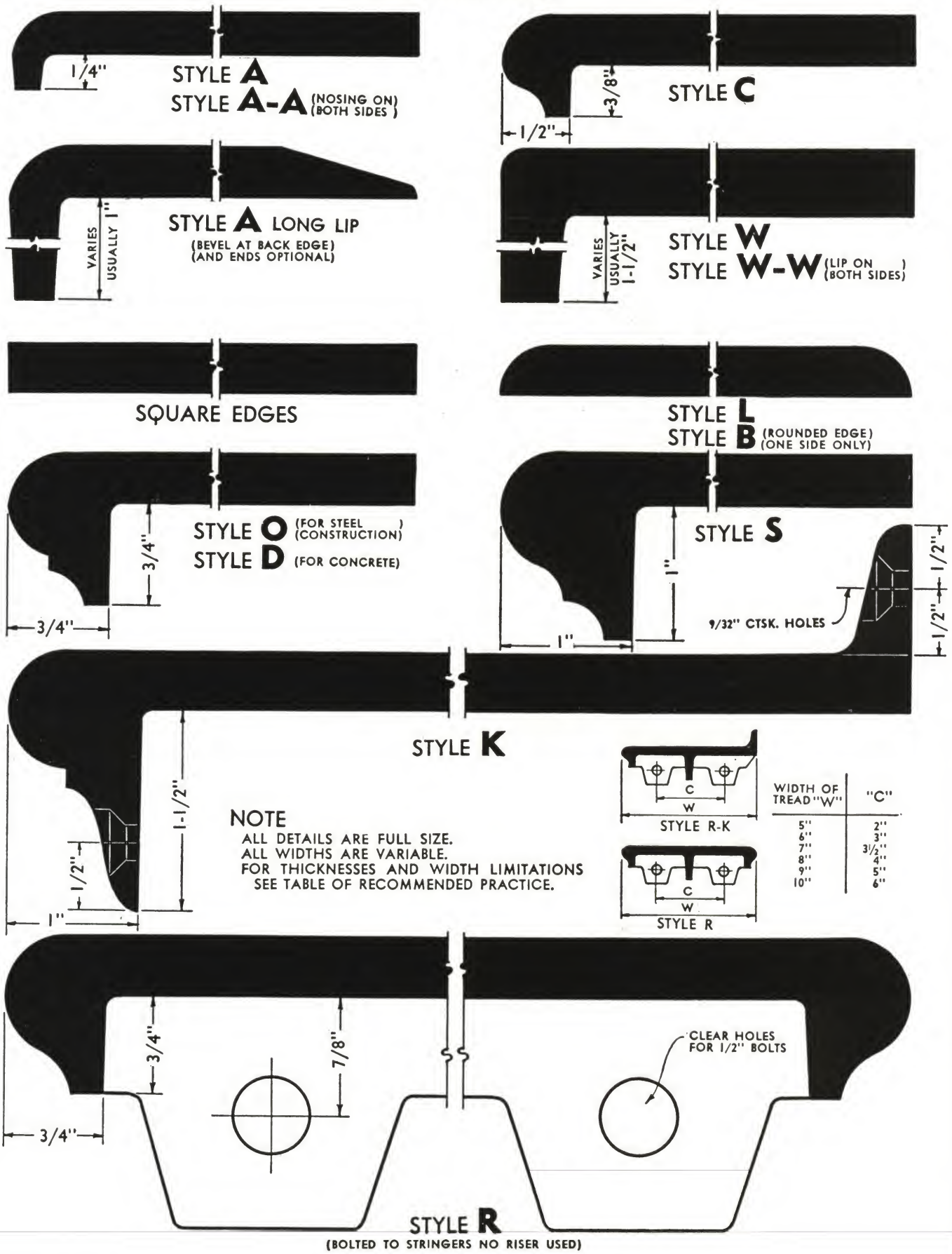
Feralun Spiral Treads and Platforms are cast complete in one piece with collar and flange or riser. Hole in collar is made for a 3½ or 4 in. o.d. pipe. The length of treads vary from 22 to 48 in.

Riser of each tread rests on tread of step below; from 12 to 16 treads to the circle. Riser heights and number of treads to the circle are dependant upon height between floors. In order that sufficient headroom be provided under top platform, risers should have a minimum height of 8 in. Hand rail spindles and center pipe furnished by others.

Spiral Staircase with Feralun Treads

FERALUN BRONZALUN ALUMALUN NICALUN

ANTI-SLIP ABRASIVE METALS



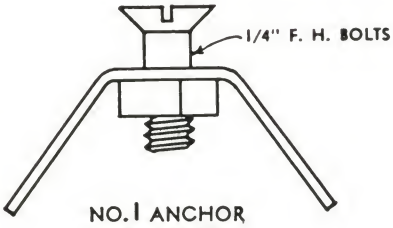
FERALUN BRONZALUN ALUMALUN NICALUN

ANTI-SLIP ABRASIVE METALS

STYLE **T**
(RECESSED)

STYLE **T**
(FLAT)

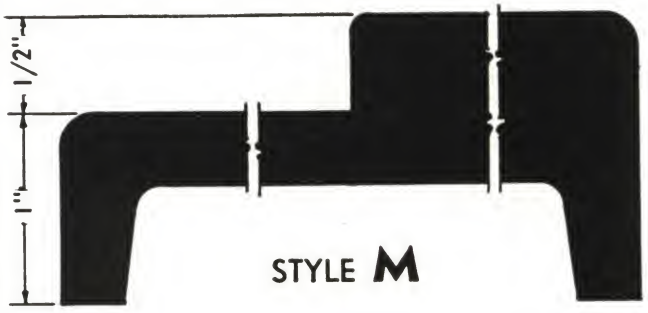
STYLE **MX**



NO. 1 ANCHOR
FOR CONCRETE

STYLE **MX** SPECIAL

HOLES
COUNTERSUNK HOLES
AS SPECIFIED FURNISHED



STYLE **M**

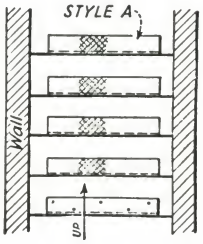
STYLE **M** SPECIAL

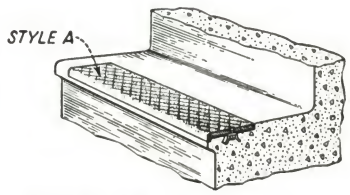
FERALUN NOT MADE LESS THAN 1/2" THICK
BRONZALUN NOT MADE LESS THAN 3/8" THICK

ELEVÁTOR SILLS
STYLE V-2 TWO GROOVES AS SHOWN
STYLE V-1 ONE GROOVE ONLY
(TYPICAL CROSS SECTION SHOWN CAN BE MODIFIED TO MEET SPECIAL CONDITIONS.)

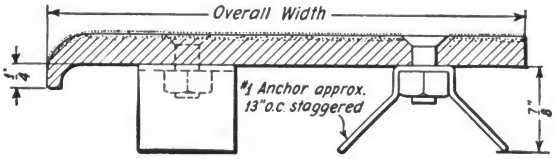
RECOMMENDED PRACTICE					
THICKNESS	FERALUN	BRONZALUN	ALUMALUN	NICALUN	LENGTH
1/4"	NOT MADE	UP TO 6" WIDE	UP TO 12" WIDE	UP TO 6" WIDE	NOT OVER 9'6" LONG.
5/16"	UP TO 6" WIDE	" " 10" "	" " 22" "	" " 10" "	
3/8"	" " 12" "	" " 18" "	" " 30" "	" " 14" "	WHEN WIDTH EXCEEDS 32", THEN LENGTH MUST NOT EXCEED 7'6".
7/16"	" " 24" "	" " 24" "	" " 44" "	" " 18" "	
1/2"	" " 32" "	" " 30" "	" " 44" "	" " 24" "	
5/8"	" " 44" "	" " 44" "	" " 44" "	" " 30" "	
3/4"	" " 44" "	" " 44" "	" " 44" "	" " 36" "	

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS





STYLE A
treads are usually 6" or 8" shorter than distance between walls or stringers.



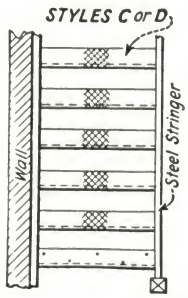
STYLE A

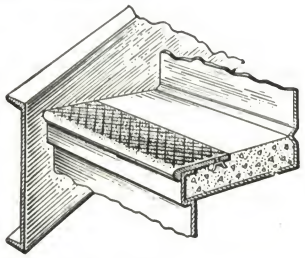
Recommended practice

Thickness	Feralun	Bronzalun	Nicalun	Alumalun	Length
1/4"	Not made	Up to 6" wide	Up to 6" wide	Up to 12" wide	Over 9'-6" made in sections, except when width exceeds 32", then length must not exceed 7'-6"
5/16"	Up to 6" wide	" " 10" "	" " 10" "	" " 22" "	
3/8"	" " 12" "	" " 18" "	" " 14" "	" " 30" "	
7/16"	" " 24" "	" " 24" "	" " 18" "	" " 44" "	
1/2"	" " 32" "	" " 30" "	" " 24" "	" " 44" "	
5/8"	" " 44" "	" " 44" "	" " 30" "	" " 44" "	
3/4"	" " 44" "	" " 44" "	" " 36" "	" " 44" "	

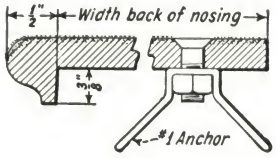
Treads for Concrete PLATE 1

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

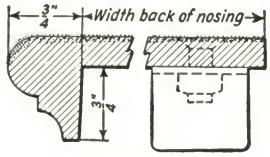




STYLES C & D
extend from stringer to stringer



STYLE C



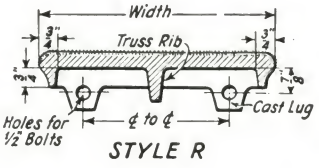
STYLE D

Recommended practice

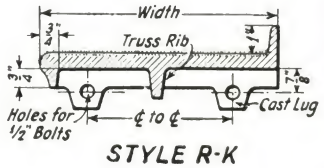
Thickness	Feralun	Bronzalun	Nicalun	Alumalun	Length
1/4"	Not made	Up to 6" wide	Up to 6" wide	Up to 12" wide	Over 9'-6" made in sections, except when width exceeds 32", then length must not exceed 7'-6"
5/16"	Up to 6" wide	" " 10" "	" " 10" "	" " 22" "	
3/8"	" " 12" "	" " 18" "	" " 14" "	" " 30" "	
7/16"	" " 24" "	" " 24" "	" " 18" "	" " 44" "	
1/2"	" " 32" "	" " 30" "	" " 24" "	" " 44" "	
5/8"	" " 44" "	" " 44" "	" " 30" "	" " 44" "	
3/4"	" " 44" "	" " 44" "	" " 36" "	" " 44" "	

Treads for Pan-Filled Construction PLATE 2

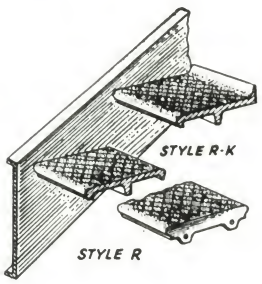
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



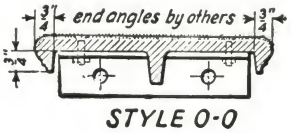
STYLE R



STYLE R-K



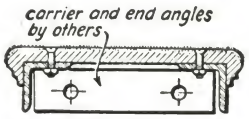
STYLES R & R-K
with cast lugs for bolting treads direct to stringers.



STYLE O-O

Recommended practice
STYLES R, R-K & O-O

Thickness
Not over 42" long... 7/16"
" " 57" " ... 1/2"
For extra heavy loads submit inquiry.



STYLE O-O
When supported by longitudinal carrier angles Style O-O may be 3/8"

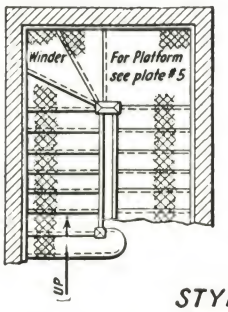
Hole Spacing R & R-K

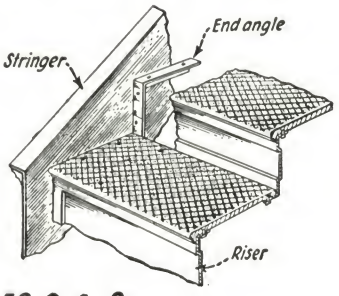
Width	5"	6"	7"	8"	9"	10"
¢ to ¢	2"	3"	3 1/2	4"	5"	6"

ABOVE STYLES ALSO MADE WITH PERFORATIONS FOR DRAINAGE. FOR DETAILS SEE PLATE No. 11 OR SUBMIT INQUIRY

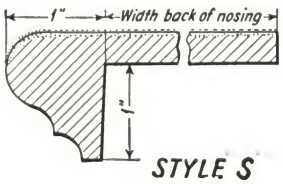
Structural Treads *(no risers required)* PLATE 3

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

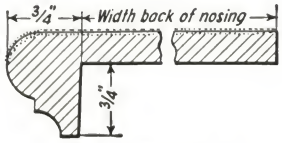




STYLES O & S
with bent risers



STYLE S



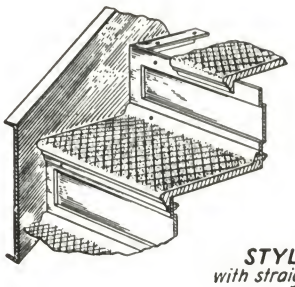
STYLE O

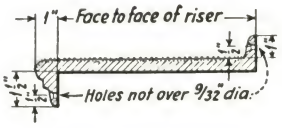
Recommended practice for Feralun

Thickness		Length
Up to 12" wide	3/8"	Up to 9'-6" in one piece.
" " 24" "	7/16"	" " " " " "
" " 32" "	1/2"	" " " " " "
When over 1/2" thick see plate #1		

Structural Treads *(risers required)* PLATE 4

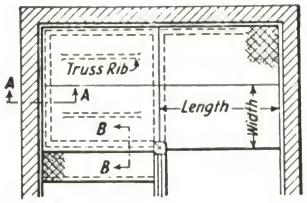
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



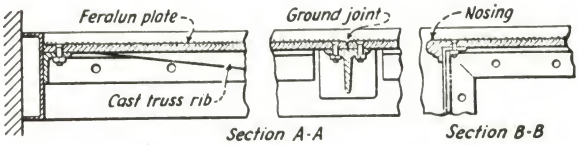


Note:
Thicknesses as on plate #4

STYLE K
with straight risers



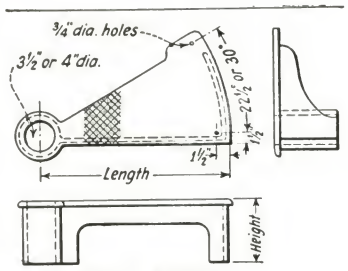
Recommended practice
Up to 32" wide ½" thick
" " 44" " 5/8" "
Plates not to exceed 44"x80" (See Plate 1.) For extra heavy loads submit inquiry



PLATFORMS

Structural Treads (risers required) - Platforms PLATE 5

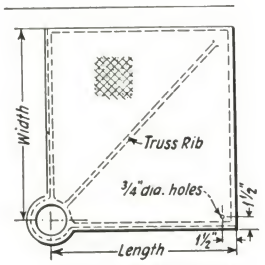
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



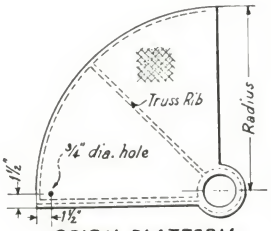
SPIRAL TREAD

Stock left and right patterns 12 and 16 to a circle in the following lengths:
24", 27", 30", 33", 36"

Minimum height 8¼" to allow sufficient headroom.



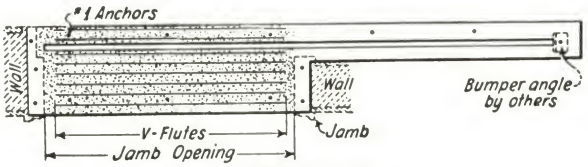
SPIRAL PLATFORM
SQUARE



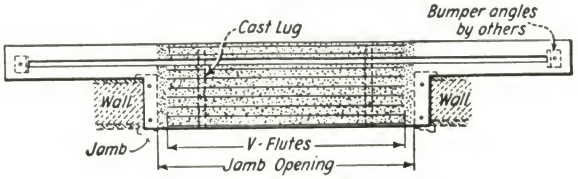
SPIRAL PLATFORM
CIRCULAR

Spiral Treads PLATE 6

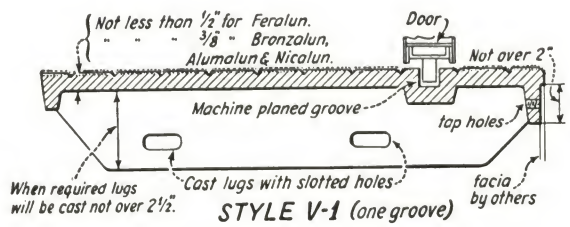
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



STYLE V-1
for single speed type elevator enclosure



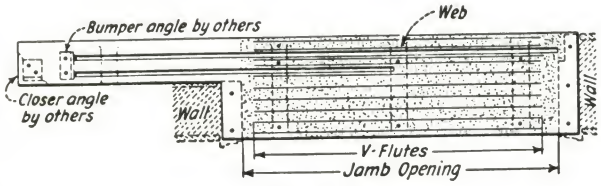
STYLE V-1
for biparting type elevator enclosure



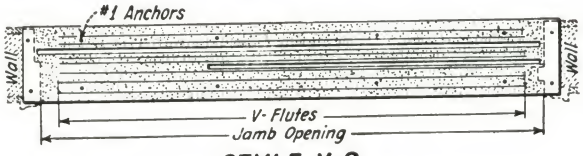
STYLE V-1 (one groove)
Sills over 9'-6" made in sections

Elevator Door Sills PLATE 7

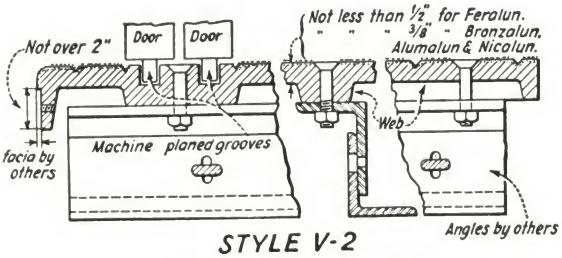
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



STYLE V-2
for two speed type elevator enclosures



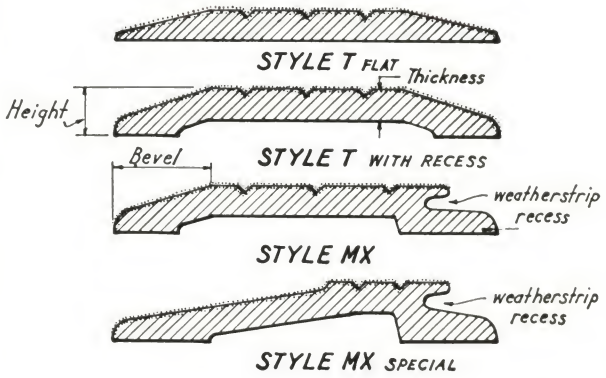
STYLE V-2
for two speed and swing type elevator enclosures



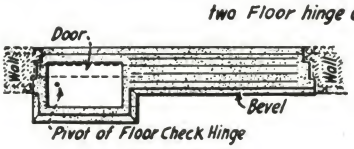
STYLE V-2
Sills over 9'-6" made in sections.

Elevator Door Sills PLATE 8

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



STYLE T
two Floor hinge cutouts

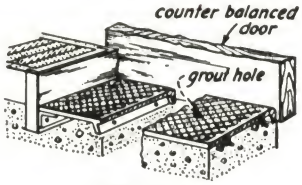


STYLE T
one Floor hinge cutout.

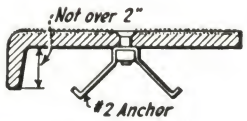
Recommended practice
Usually ½" high
For thickness and width limitations see PLATE #1.

Door Saddles PLATE 9

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS

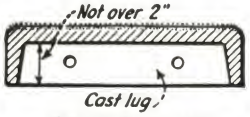


STYLE W
for service elevator opening

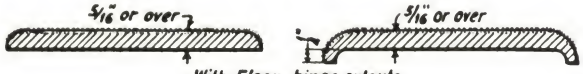


STYLE W

Recommended practice	
½" thick for Feralun	
⅜" " "	Bronzalun, Alumalun & Nicalun.
Over 9'-6" made in sections	

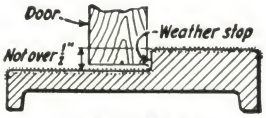


STYLE W-W

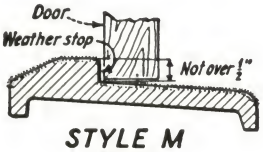


With Floor hinge cutouts refer to detail on plate #9

STYLE L STYLE A-A



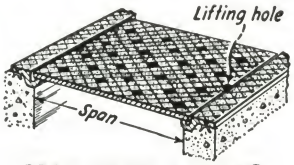
STYLE M
Standard



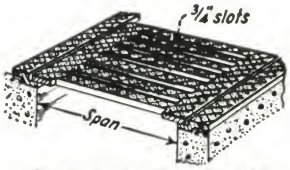
STYLE M
Special

Door Saddles PLATE 10

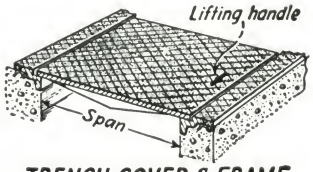
ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



DRAIN COVER & FRAME
with perforations

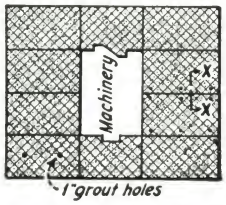


DRAIN COVER & FRAME
with slots



TRENCH COVER & FRAME

Recommended practice	
Span up to 32"	½" thick
" " " 44"	⅝" "
" " " 44"	¾" "
Plates not to exceed 44"x80" For extra heavy loads submit inquiry	



FLOOR PLATES
for use on any flooring
(concrete, wood, steel, etc.)

Section X-X

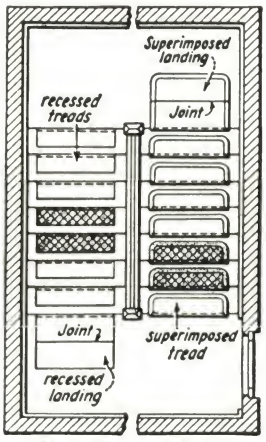
Wood sleepers with anchors

Machine screws tapped in channel

Recommended practice	
½" thick up to	32"x 54"
⅝" " "	44"x 60"
¾" " "	44"x 80"
(See Plate 1.)	

Floor Plates - Trench Covers PLATE 11

ABRASIVE-METAL
FERALUN BRONZALUN
ALUMALUN NICALUN
ANTI-SLIP PRODUCTS



Plan No. 2 Plan No. 1

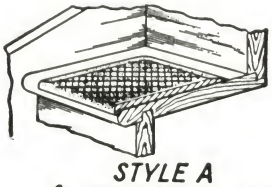
Notes:-

Plan No. 1 shows superimposed treads with back edge and ends bevelled.

Plan No. 2 shows recessed treads with back edge and ends squared.

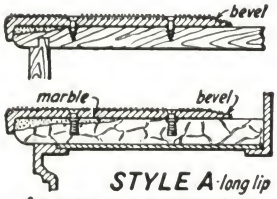
Recommended Practice:-

Treads should extend to within 2½" of riser and stringers.

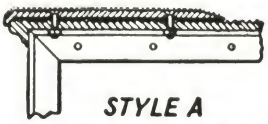


STYLE A
for new or slightly used treads

STYLE A
recessed in treads

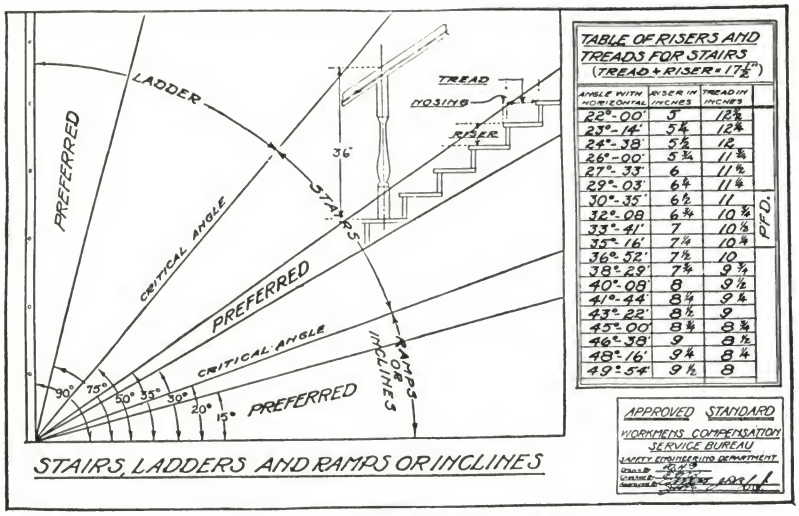


STYLE A-long lip
for worn wood or marble treads maximum depth of lip 2" from underside of tread.



STYLE A
for worn iron treads.

Treads for Repair Work PLATE 12



Correct Angles for Ladders, Stairs and Ramps

Specifications for Anti-Slip Safety Treads

Safety Treads—All concrete and cement finished steps shall be provided with Feralun Anti-Slip Treads, Style (A, C or D) as made by the American Abrasive Metals Co. Treads on cement finished steps, pan-filled type, shall be (4 or 6 in.) wide and shall extend the full length of the step. Style A treads on concrete steps shall be (4 or 6 in.) wide and extend to within (3 or 4 in.) of the stringers. Style (C or D) treads shall be (4, 4½, 6 or 7½ in.) wide and shall extend the full length of the step. The surface of the treads shall be kept free of cement.

Steel Stairs With Risers—Steel stairs with risers shall be equipped with Feralun Anti-Slip Treads, Style (O, S or K) as made by the American Abrasive Metals Co. as shown on drawings. Platforms and landings shall be of Feralun of suitable thickness for span required, not less than $\frac{7}{16}$ in.

Steel Stairs Without Risers—Steel stairs without risers shall be equipped with Feralun Anti-Slip Treads as made by the American Abrasive Metals Co. and be Style (R or K) (6, 8, 9 or 10 in.) wide, with end lugs bolted directly to the stringers, or Style 0-0 bolted to carrier angles attached to the stringers. (See Plate 3 for required thickness.)

Spiral Stairs—Spiral treads and platforms shall be of Feralun as made by the American Abrasive Metals Co. They shall be of stock pattern to suit conditions. (See Plate 6.)

Door Saddles—Exterior entrance, fire and roof doors shall be provided with saddles of (Feralun, Alumalun, Bronzalun, Nicalun) anti-slip material as made by the American Abrasive Metals Co., Style (T, L or M). When required, saddles shall be cast to receive floor check hinges. Style M saddles shall be made with rebate to act as weather stop.

Interior doors shall be provided with (Feralun, Bronzalun, Alumalun, Nicalun) anti-slip saddles, Style (T, L or A-A) with (fluted, plain or hatched) surface. Saddles shall be full width of partition wall and shall extend the full width of door openings between jambs.

Elevator Door Sills—Passenger elevator door openings shall be provided with sills of (Feralun, Bronzalun, Nicalun) anti-slip material as made by the American Abrasive Metals Co. Sills for sliding doors shall have machined grooves and machined recess for lip on the shaft side to receive facia plate. Sills for sliding doors shall be full width of wall thickness.

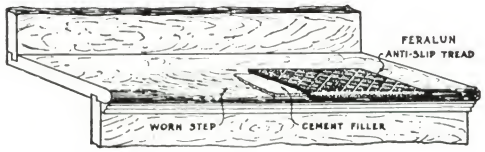
Freight elevator door openings shall be provided with sills of Feralun anti-slip material, Style W, with lip extending down the shaft side. They shall be full width of the wall thickness.

Floor Plates—Floor plates shall be of Feralun anti-slip material as made by the American Abrasive Metals Co. Plates shall be cast with truss ribs and be of sufficient thickness to support a live load (state pounds) per square foot.

Trench Covers and Frames as indicated on the plans shall be made of Feralun anti-slip material of the dimensions and thicknesses shown on the detailed drawings.

Feralun for Repair of Worn Stairs

Worn stairs of wood, terrazzo, marble, slate or other materials can be made safe and greatly improved in appearance by the use of appropriate abrasive metal castings, Feralun, Bronzalun, Alumalun or Nicalun, at a cost for installation that is surprisingly low.



Detail of Repair

Cast in any size or shape desired, treads for repair work are furnished with a deep lip to cover worn depressions and irregularities in old steps, and with beveled back and ends when the entire surface of existing tread is covered. When repair nosings are to be used in connection with linoleum, or when recesses are provided, the back and ends will be furnished square or slightly undercut. Necessary anchorage is obtained by wood screws or expansion bolts, depending upon the surface covered.

Quick-drying magnesite cement is recommended for use in leveling up worn steps. (See page 6, Plate 12.)

FERALUN

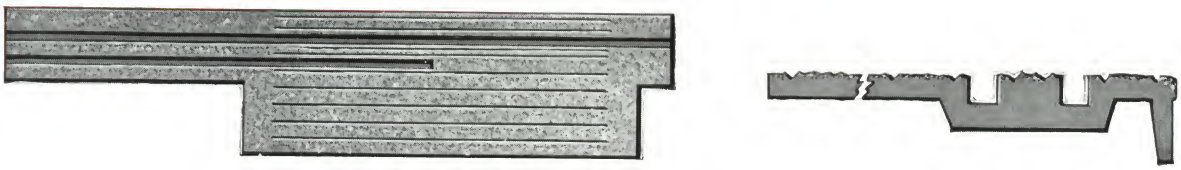
BRONZALUN

ALUMALUN

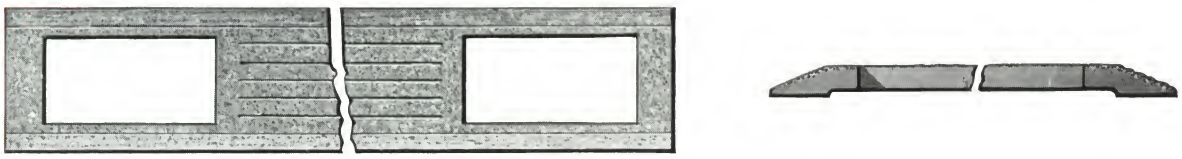
NICALUN

ENAMALUN

Abrasive Metal Anti-Slip Products



Style V2—Two Speed Door



Style T—With Floor Hinge Cut Out

BRONZALUN AND NICALUN are extensively used for treads, elevator door sills and saddles where appearance is a factor to be considered. They are made in the same manner and of the same grade of materials as Feralun except for the matrix. They have the same durability, safety, uses and quality as Feralun, and are made in the same forms and with the same approvals. Both have the same electric furnace product embedded in the surface and nosing to produce the same anti-slip, non-wearing quality of Feralun.

Products made from these materials are manufactured to specification. Two suggested styles are given above to show usual forms which have been produced to fulfill certain requirements. These and many others are made and have proven highly satisfactory. (See detail sheets, Plates 7, 8, 9 and 10.)

Bronzalun is used generally where there is a desire for such a shade to be in keeping with the general decorative scheme. It has been found very satisfactory where trim, fixtures or the general decorative scheme is in black, bronze, brass or gold.

Nicalun provides architectural beauty as well as anti-slip effectiveness and durability. It has a bright appearance and resists corrosion. It is particularly desirable for use with marble trim and in highly modern ornamental locations where a silver-white color harmonizes. See details on page 9, Plates 7 and 8.

AMERICAN ABRASIVE METALS CO., IRVINGTON, N. J.

SECTION 12

CONTINUED ⟶

AMERICAN BLUE STONE COMPANY

*AMBLUCO NON-SLIP BLUE STONE STAIR TREADS AND FLOORING

101 Park Avenue, NEW YORK, N. Y.

QUARRIES AND MILLS, AMBLUCO, WYOMING CO., N. Y.

Products

*Ambluco Non-slip Stair Treads and Landings for interior steel and concrete stairways; Ambluco Flooring, Thresholds and Wall Base for interior uses.

For *Genesee Valley and "North River" Blue Stones for exterior uses, and *Naturcleft Flagging, see File Index.

*Reg. U. S. Pat. Off.

"A Produce with a Real Guarantee"

Facilities

This company has well developed quarries on its own property of about 200 acres, located at Ambluco Wyoming County, N. Y. The mills and yards are equipped with the most modern machinery so that large volumes of business can be handled without delay.

One building 150 ft. long, devoted exclusively to the storing and finishing of Ambluco Products is heated during the cold weather so that orders can also be filled in the winter.

Ambluco Non-slip Stair Treads and Landings

These treads and landings have established themselves largely on their own merits. By those who have studied their qualifications or used them, they are declared to be superior to and more economical than any other type. Millions of square feet in use.

Attractive Color and Texture—Uniform color, even grained texture and standard sand sawed finish (free from saw marks and imperfections) give a splendid appearance. The distinctive light-blue shade blends well with adjacent light color surfaces or gives a sharp clean contrast with dark material. It is a fine, close grained blue stone, made up mostly of pure, hard quartz as shown below:

Mineralogically Considered

Fine, hard sand, mostly quartz	70%
Clay, as binding material	28%
Water	2%

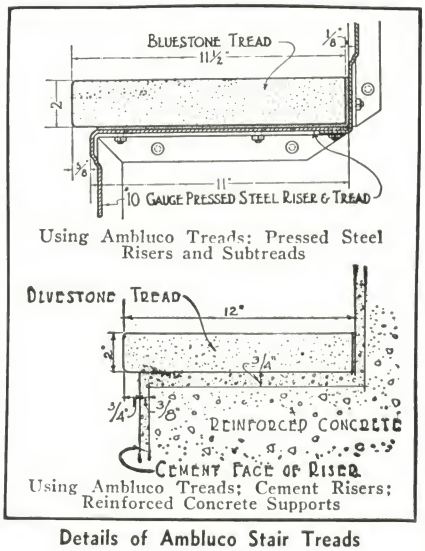
Non-slip—The non-slip property, due to fine grained quartz, does not grip the foot to cause tripping, but gives ample security against slipping at all times, whether wet or dry, without requiring resurfacing or replacing. These quartz particles are always uniformly distributed throughout the entire stone—a condition only produced by nature—and prevents surface from ever wearing smooth.

Durable—Extreme durability of the Ambluco Treads comes from the character of the material and steadily increasing hardness of the stone brought on by heat of the building, causing the treads to resist wear as they age.

*Registered U. S. Patent Office.

Ambluco Stair Treads, Hartford (Conn.) Fire Insurance Co. Building

Parker, Thomas & Rice, Architects
Marc Eidlitz & Son, Contractors



Using Ambluco Treads; Pressed Steel Risers and Subtreads

Using Ambluco Treads; Cement Risers; Reinforced Concrete Supports

Details of Ambluco Stair Treads

Density of the stone's structure which helps to give the remarkable wearing quality is revealed comparatively in the following table:

Crushing Strength

Rockport granite (Kidder's Hand Book)	17,750 lb. per sq. in.
Vermont marble	13,500 lb. per sq. in.
(Ambluco Non-slip) blue stone	19,970 lb. per sq. in.

This blue stone weighs only, approximately, 150 lb. per cu. ft. (or 25 lb. per sq. ft. 2 in. thick) when cut ready to set.

Sanitary—Ambluco Non-slip Treads and Landings are easily kept sanitary. Their great hardness prevents generation of dust and permits clean sweeping and mopping. The flat, non-porous surface has no grooves or pores to collect filth and disease germs.

Quiet—They are practically noiseless, do not resound from footsteps nor become loose and rattle. This feature is a truly essential quality for most buildings, and especially for hospitals where human beings are suffering, and for schools where it is so important that the pupils' minds are not distracted from their work.

Rust-proof—In contrast to many other treads these Ambluco treads do not become rusty themselves nor stain other adjacent materials.

Permanent and Economical—"Lasts the life of a school" is a fitting slogan, for, as indicated by tests and reputed records, Ambluco Non-slip Treads give satisfactory service in an average school for 50 to 60 years, while observance shows that at existing rate of advancements in scientific design and construction, a school is obsolete in that length of time and is frequently replaced by a new building. In fact, there are records where these blue stone treads have been removed in the wrecking of a school and the same treads later installed in a new school.

Initial cost of Ambluco Treads (1¼ in. to 2 in. thick) is about the same or less than other natural stone treads, and ultimate cost much less even than cheap metal and composition treads.

The facility with which they can be set on regular types of fabricated or pressed steel stair construction eliminates the great expense of specially designed steel members and use of dowels.

No maintenance cost is necessary after these blue stone treads are properly installed.

As a matter of fact, the Ambluco Treads and Landings can be safely adopted without first experimenting.

Specification Suggestions—*Identification*—AMBLUCO Non-slip Treads and Landings should be called by their brand-name, and although in many localities this name is well known, we suggest also (to avoid substitution of inferior stones) requiring that they are stenciled AMBLUCO and stating that they are produced by the AMERICAN BLUE STONE COMPANY, New York, N. Y.

Samples—AMBLUCO stenciled samples shall be submitted for approval of the architect before commencing the work. Substitution of softer New York or Ohio blue stone will not be accepted.

Finishes—Sand sawed or wet sand rubbed are the only two finishes which should be allowed. The former has proved entirely satisfactory and we endorse it as a standard. Planed and axed surfaces should be avoided as they impair the stone.

AMBLUCO Treads and Landings are universally used 2 in. thick, but can be furnished down to 1¼ in. Complete specifications will be supplied upon application.

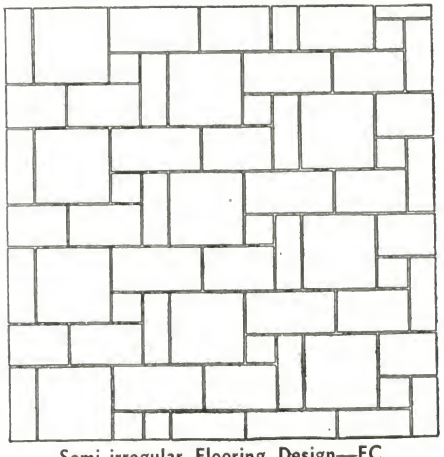
Accepted as Standard by Prominent Users—Subsequently to the standardizing on the AMBLUCO Blue Stone Treads by the City of Boston and its many suburbs in their schools and other public buildings, nearly all the rest of New England, recognizing the superior features of these treads, did likewise. Many of the leading school architects in the Eastern, Southern and Middle Western States specify them. The use has not been confined to schools, but has also been extended to other public buildings, such as hospitals, museums, colleges, churches, clubs, railroad stations and high class commercial buildings.

Also AMBLUCO installations are constantly being made to replace worn-out treads of other kinds.

AMBLUCO Treads and Landings are used, for the most part, by architects and engineers long accustomed to incorporating in their specifications the best material for their work.

A Few Ambluco Tread and Landing Installations

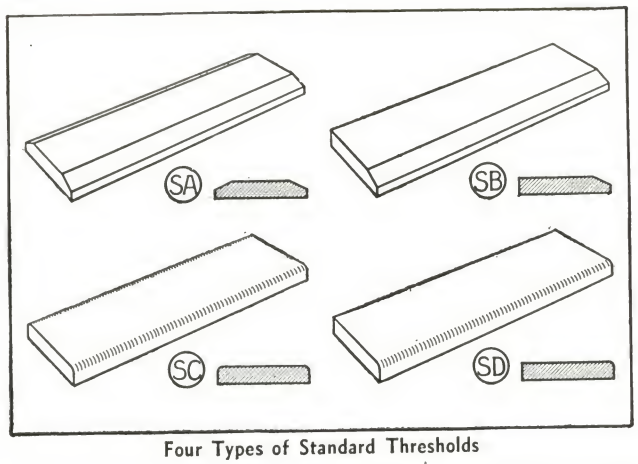
Girls' Continuation School, Boston, Mass., Joseph J. Driscoll, Architect
Essex County Sanitarium Buildings, Verona, N. J., Sutton & Sutton, Architects
Taft Upper School, Watertown, Conn., James G. Rogers, Architect
New York State Teachers' College, Buffalo, N. Y., William E. Haugaard, Architect
Legal Research Building, University of Michigan, Ann Arbor, Mich., York & Sawyer, Architects
St. Joseph's Normal Institute, Barrytown, N. Y., James W. O'Connor, Architect
Brookline High School, Boston, Mass., Kilham, Hopkins & Greeley, Architects
Columbia High School, South Orange, N. J., Guilbert & Betelle, Architects
St. Boniface R. C. School, Sea Cliff, L. I., N. Y., Jas. W. O'Connor, Architect
Homeopathic Hospital, Providence R. I., Kendall Taylor & Co., Architects
Lehigh Valley Railroad Station, Easton, Pa., J. J. McCleece, Architect
Federal Reserve Bank, Boston, Mass., R. Clipston Sturgis, Architect
Liberty Telephone Exchange, Boston, Mass., Parker, Thomas & Rice, Architects



Semi-irregular Flooring Design—FC
Five different size blue stone slabs laid to a pattern with broken ¼-in. joints

Ambluco Blue Stone Flooring, Thresholds and Wall Base

In these days of the exacting of high liability for accidents to mankind, the fundamental requirement in flooring is that it does not become slippery under any conditions. In this blue stone flooring, quartz, the essential constituent, being harder than the accessory minerals, is pre-eminent on the wearing surface at all times and makes the floor slip-proof and very durable. Besides the rust-proof, non-porous, dustless and sanitary qualifications of this flooring, it is quiet to walk on.



Four Types of Standard Thresholds

AMBLUCO Flooring is between 1¼ and 2 in. thick and is especially suitable for interior floors in both regular and irregular designs, a suggestion of which is shown below.

Ambluco Flooring, Base, Treads and Risers, Alumnae Hall, Vassar College, Poughkeepsie, N. Y.
HUNT and HUNT, Architects

Joints of ⅛ to ¼ in. are usually used for the regular styles and ½-in. joints are more in keeping for the irregular style floors.

Its sawed or rubbed finish gives a level surface on which chairs and other furniture do not rock, a feature so annoying with natural split stone.

Other delightfully artistic effects are gained by several methods. One, by varying the finishes—having some pieces sawed with sand and some with steel shot. Another, by omitting the washing of the stone after sawing, which gives a variegated coloring from the rust stain of the saws.

AMBLUCO Flooring is especially appropriate for, and is being used extensively in churches, cathedrals, museums, libraries, clubs, hotels, railroad stations, residences, high class commercial buildings, and the vestibules and stair halls of hospitals, schools and college buildings.

Perhaps in no place is there greater and more noticeable wear than in interior thresholds or saddles, and therefore, for this purpose, this AMBLUCO non-slip sand rubbed product is unapproached. These are furnished 1¼ to 2 in. thick by the desired widths, and with a choice of bevels.

The AMBLUCO Wall Base and Plinths should be used to match the flooring and thresholds, landings and treads. A fine sand rubbed finish is most appropriate, although the sand sawed finish frequently harmonizes better with certain styles of wall.

Typical Ambluco Flooring, Base and Threshold Installations

Museum of Fine Arts, Boston, Mass., Guy Lowell, Architect
Cathedral of Incarnation, Baltimore, Md., Bertram G. Goodhue, Architect
Christ Church, Bronxville, N. Y., Bertram Goodhue, Associates, Architects
University of Maine Arts & Science Building, Orono, Me., Crowell & Lancaster, Architects
Baker Chocolate Co., Dorchester, Mass.
Carl Weeks Residence, Des Moines, Iowa, Rasmussen & Wayland, Architects
Pilgrim State Hospital, Pine Aire, L. I., N. Y., Wm. E. Haugaard, Architect

Suggestions for Care of Ambluco Products

After AMBLUCO Treads, Landings, Flooring, etc., have been installed they should be thoroughly scrubbed with sand and water until clean. No acid or other damaging substances should be used. These treads should be thoroughly swept as often as the corridor and hall floors. They gradually become darker from the usual soiling, but if a darker shade is preferred at installation, scrub and then paint with raw linseed oil. This can be done as often as will give the best results.

MEMORANDA

AMERICAN MASON SAFETY TREAD CO.

GENERAL OFFICE AND FACTORY
LOWELL, MASS.

NEW ENGLAND SALES BRANCH—BOSTON, MASS.

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ROCKFORD, ILL.
ROCK ISLAND, ILL.
MINNEAPOLIS, MINN.
KANSAS CITY, MO.
ST. LOUIS, MO.
TULSA, OKLA.

AGENTS IN ALL PRINCIPAL CITIES

CANADIAN DISTRIBUTORS: DARLING BROS., LTD.

MONTREAL HALIFAX WINNIPEG OTTAWA TORONTO CALGARY VANCOUVER

A TYPE OF MASON SAFETY TREAD FOR EVERY UNDERFOOT SAFETY SERVICE

The Mason Ribbed Type Tread with Aluminum Nosing

The Mason Abrasive Iron Tread (Style VR)

Typical Installations

RECOMMENDED APPLICATIONS OF MASON SAFETY PRODUCTS

YOUR FOOT NEVER SLIPS	Mason Safety Tread Ribbed Type					Mason Abrasive Metal				Mason Structural Tread		Mason Nosings and Edgings		Mason Thresholds		Ladder Shoes
	Abrasive filled		Lead filled			Cast metal with abrasive surface				Cast metal with abrasive filling		Extruded		Corrugated		Abrasive Filled
	Steel	Brass	Steel	Brass	Aluminum	Iron	Bronze	Aluminum	Nickel	Cast iron	Cast bronze	Brass	Aluminum	Ext. brass	Rolled steel	Steel
STAIRS AND PLATFORMS																For Use in Industrial Plants, Stock Rooms and Similar Locations
Marble*		x		x	x		x	x	x			x	x			
Slate or Stone*	x	x	x	x	x	x	x	x				x	x			
Steel Concrete Fill*	x	x	x	x		x	x	x		x	x	x				
Concrete Solid*	x	x	x	x		x	x	x		x	x	x				
Terrazzo*	x	x	x	x	x	x	x	x	x			x	x			
Tile*	x	x	x	x	x	x	x	x	x			x	x			
Wood*	x	x	x	x	x	x	x	x				x	x			
Linoleum or Rubber*	x	x	x	x	x	x	x	x				x	x			
Asphalt or Comp.*	x	x	x	x	x	x	x	x				x	x			
STRUCTURAL TREADS						x				x						
FLOORS AND RAMPS	x	x	x	x	x	x	x	x		x						
MATS	x	x	x	x	x	x	x	x				x	x			
TRENCH COVERS						x	x			x	x					
CURB BARS						x										
SPIRAL TREADS						x										
LADDER STEPS						x		x		x						
STEP PLATES	x	x	x	x	x	x	x	x								
THRESHOLDS	x	x	x	x	x	x	x	x	x	x	x			x	x	
ELEVATOR SILLS						x	x		x	x	x					

**Note—Applications apply for new or repair work. See last page for Mason repair methods.*

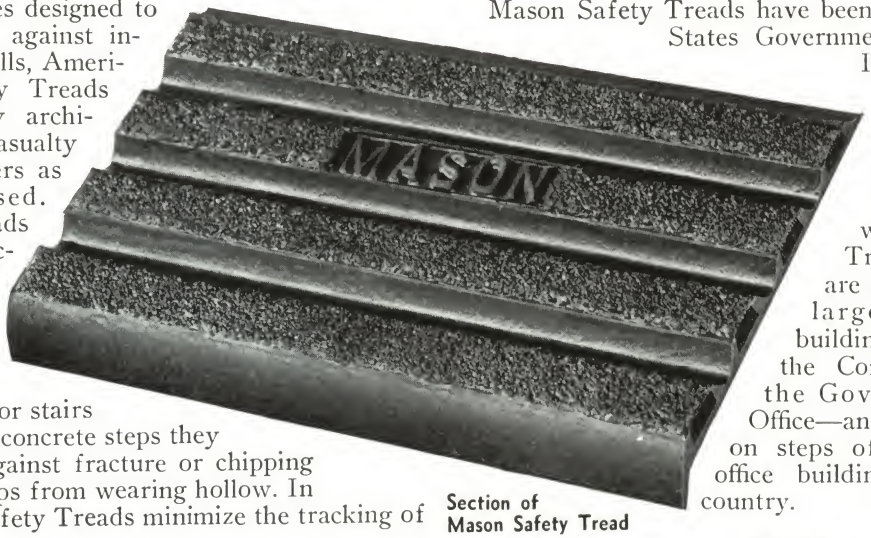
MASON SAFETY TREAD, Ribbed Type with Rolled Steel Base—Abrasive or Lead Filled

For Use Where Good Appearance in Addition to Safety Is Required

Preventing Accidents with Mason Safety Treads

Of all the devices designed to provide protection against injuries caused by falls, American Mason Safety Treads are recognized by architects, engineers, casualty companies and users as being unsurpassed. Mason Safety Treads provide what is practically positive immunity from slipping.

Mason Safety Treads insure greater durability for stairs of any type and on concrete steps they protect the edge against fracture or chipping and prevent the steps from wearing hollow. In addition, Mason Safety Treads minimize the tracking of dirt into buildings.



Section of Mason Safety Tread

In United States Government Buildings

Mason Safety Treads have been used by the United States Government for many years. It is indicative of their reliability that the decks and ladders of many vessels of the U. S. Navy are equipped with Mason Safety Treads and that they are in general use in the larger Governmental buildings in Washington—the Congressional Library, the Government Printing Office—and they are installed on steps of hundreds of post office buildings throughout the country.

Repairs

A worn stair, no matter what construction, may be readily renewed by the use of Mason Safety Tread.

Service and Co-operation

Any desired information regarding Mason Safety Treads will gladly be furnished and we will co-operate in the solution of any problem involving the installation of safety tread equipment.

Mason Safety Treads Prevent Litigation

Not only do Mason Safety Treads protect the pedestrian, they also protect the owner from accident litigation. It has been repeatedly recognized by judges and juries alike that if a person is injured by a fall on a stair thus equipped it is not the fault of the owner because adequate precaution had been taken to provide safe underfoot conditions.

STANDARD SECTIONS—FULL SIZE

Furnished cut to any length, drilled and countersunk. Anchors for concrete furnished when specified.

FIG. 1, Steel Base, 6 in Wide, 7 Ribs.

FIG 1A, Steel Base, 6 in Wide, 7 Ribs with Nosing.

FIG 2A, Steel Base, 4 in. Wide, 5 Ribs with Nosing.

FIG. 3, Steel Base, 4 in. Wide, 5 Ribs.

FIG. 3A. Steel Base 3¾ in. Wide, 4 Ribs.

FIG. 6, Steel Base 2½ in. Wide, 3 Ribs.

FIG 4, Steel Base 3½ in. Wide, 4 Ribs with Nosing

FIG. 5, Steel Base, 3 in. Wide, 3 Ribs, Nosing and Straight Back.

Base is rolled, unperforated steel with alternate U-shaped and dovetailed grooves filled with lead or abrasive

Fig. 5—Especially made for granolithic work or for use with cork backing

MASON SAFETY TREAD—RIBBED TYPE
Extruded Hard Brass—Abrasive or Lead Filled
Extruded Aluminum Heat Treated—Lead Filled

FIG.7 BRASS BASE
FIG.41 ALUMINUM BASE } 6"wide,8 ribs,plain

FIG.7A BRASS BASE ONLY 5-1/4"wide,6 ribs with nosing

FIG.8 BRASS BASE
FIG.40A ALUMINUM BASE } 4"wide,5 ribs,plain

FIG.40 ALUMINUM BASE ONLY 4"wide,5 ribs with nosing

FIG.11A BRASS BASE
FIG, 42 ALUMINUM BASE } 3"wide,4 ribs,with nosing and square back

FIG.9 BRASS BASE
FIG.39 ALUMINUM BASE } 3"wide,4 ribs,plain

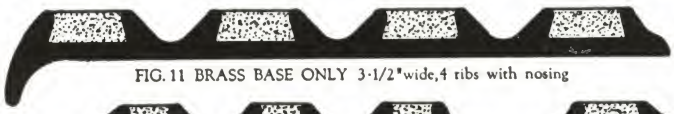


FIG. 11 BRASS BASE ONLY 3-1/2"wide,4 ribs with nosing

FIG.10 BRASS BASE ONLY 2-1/4"wide, 3 ribs,plain

FIG. 12 BRASS BASE ONLY
2-1/8"wide, 3 ribs with nosing

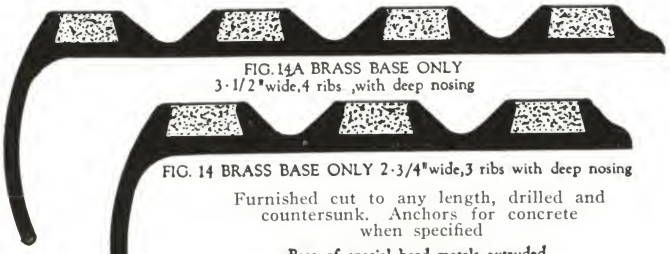


FIG. 14A BRASS BASE ONLY
3-1/2"wide,4 ribs ,with deep nosing

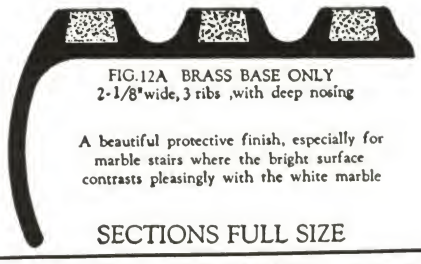


FIG.12A BRASS BASE ONLY
2-1/8"wide, 3 ribs ,with deep nosing

A beautiful protective finish, especially for marble stairs where the bright surface contrasts pleasingly with the white marble

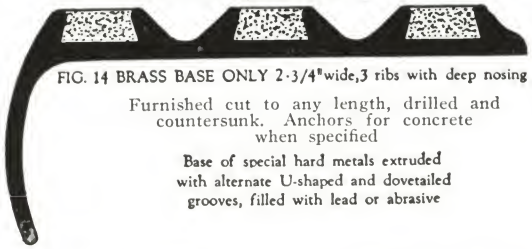


FIG. 14 BRASS BASE ONLY 2-3/4"wide,3 ribs with deep nosing

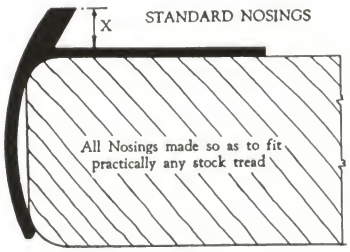
Furnished cut to any length, drilled and countersunk. Anchors for concrete when specified

Base of special hard metals extruded with alternate U-shaped and dovetailed grooves, filled with lead or abrasive

SECTIONS FULL SIZE

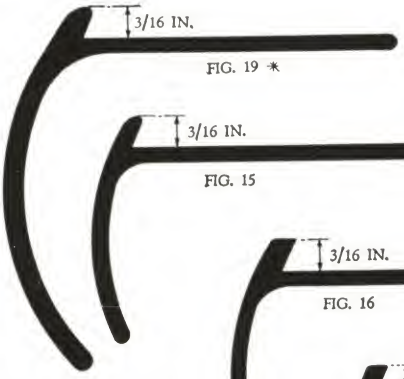
MASON NOSINGS AND EDGINGS—Extruded Polished Brass or Aluminum

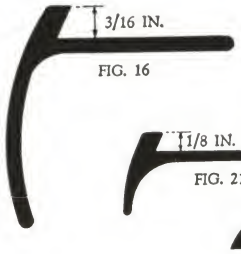
Stairs equipped with Mason Nosings in conjunction with linoleum or other floor covering present a handsome and easily maintained finish. The deep, sturdy lip is projected and undercut to receive and lock the floor covering. This also reinforces the front edge of the stair tread at the point where the wear is greatest. The substantial horizontal web insures permanent concealed fastening.

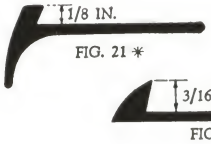


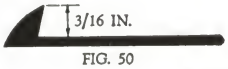
X Indicates the thickness of floor covering to be used with Fig. No,

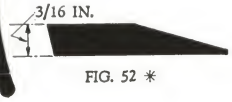
X	FIGURE NUMBER
1/8 IN.	18-B
3/16 IN.	18-A
1/4 IN.	18
3/8 IN.	20











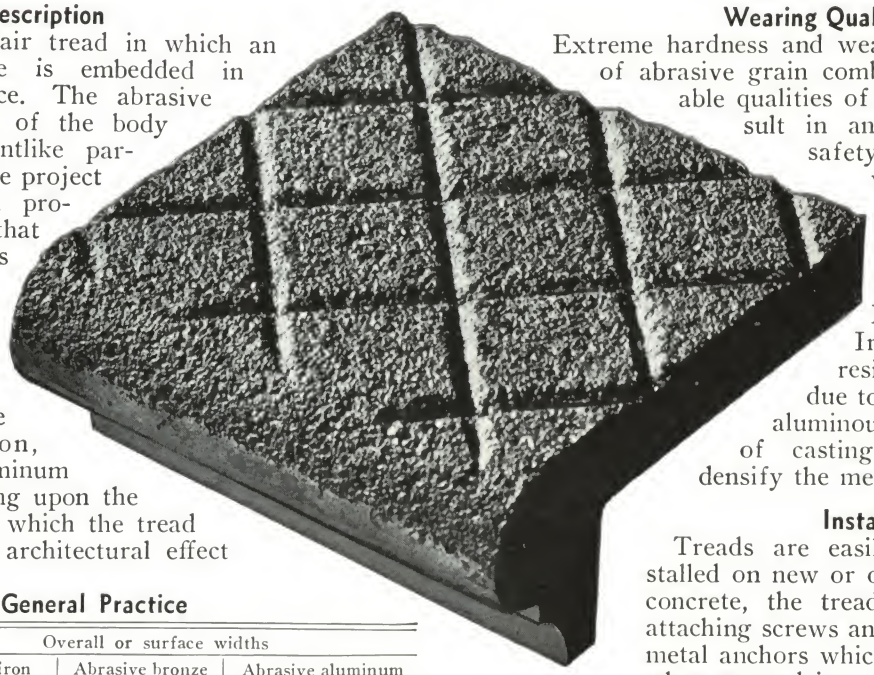
DETAILS - FULL SIZE

All Nosings and Edgings furnished cut to length, drilled and countersunk.

* Brass Only

AMERICAN MASON SAFETY TREAD CO.

MASON ABRASIVE IRON—MASON ABRASIVE BRONZE MASON ABRASIVE ALUMINUM MASON ABRASIVE NICKEL—SAFETY TREADS



Description

A cast safety stair tread in which an aluminous abrasive is embedded in the wearing surface. The abrasive is an integral part of the body metal and the flintlike particles of the abrasive project above the surface, producing a surface that effectively prevents slipping whether wet or dry.

Metals

These treads are furnished with the body metal of iron, brass, bronze, aluminum or nickel—depending upon the type of service for which the tread is required or the architectural effect desired.

Wearing Qualities

Extreme hardness and wear-resisting qualities of abrasive grain combined with the durable qualities of the metal body, result in an extremely rugged safety tread — one that will present an effective non-slip surface for a long period despite hard wear. The Mason Abrasive Iron possesses a high resistance to corrosion due to the addition of the aluminous abrasive at time of casting which tends to densify the metal.

Installation

Treads are easily and quickly installed on new or old work. On fresh concrete, the treads are fastened by attaching screws and specially designed metal anchors which embed themselves when pressed into place. For old concrete, marble, slate, etc., the use of expansion bolts is recommended. Only wood screws are needed to hold treads securely in place on wood stairs.

General Practice

Minimum thickness of treads	Overall or surface widths		
	Abrasive iron	Abrasive bronze	Abrasive aluminum
¼ in.	Not made	Up to 4 in.	Up to 9 in.
5/16 in.	Up to 6 in.	Up to 9 in.	Up to 18 in.
⅜ in.	Up to 12 in.	Up to 15 in.	Up to 30 in.
7/16 in.	Up to 24 in.	Up to 24 in.	Up to 44 in.
½ in.	Up to 32 in.	Up to 30 in.	Up to 44 in.
5/8 in.	Up to 44 in.	Up to 44 in.	Up to 44 in.
¾ in.	Up to 44 in.	Up to 44 in.	Up to 44 in.

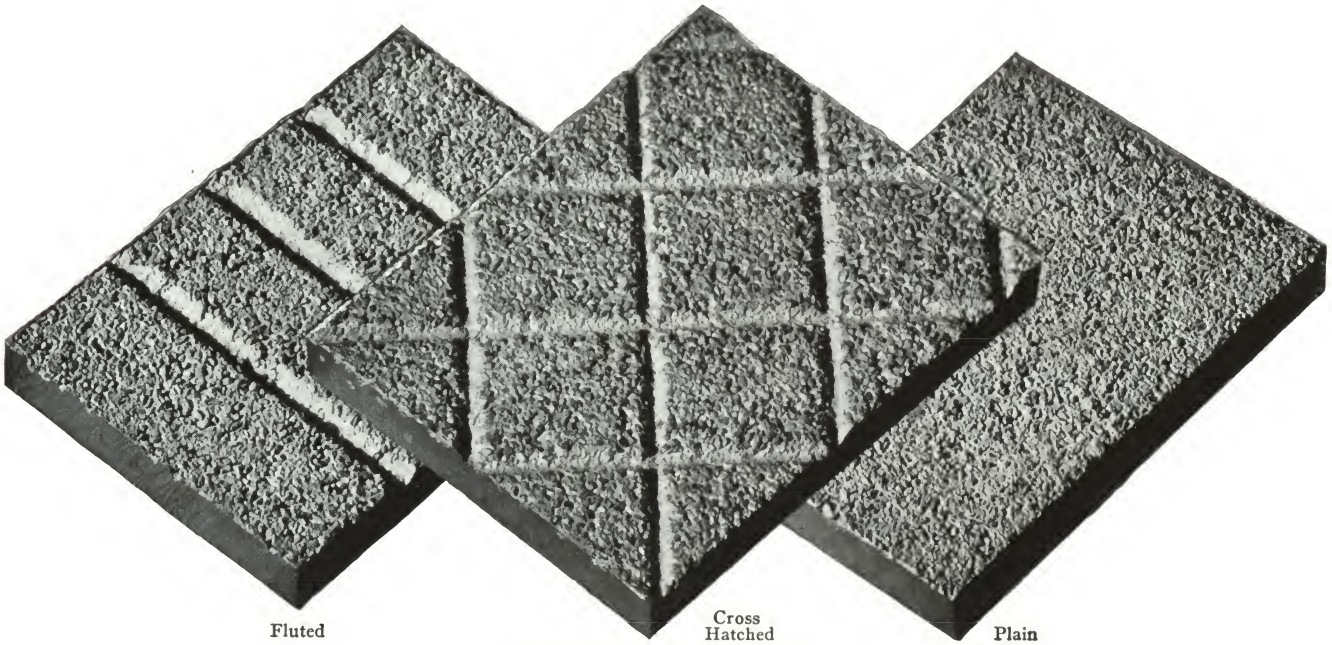
Lengths—Not over 9 ft. 6 in. long except when width exceeds 32 in., then length must not exceed 7 ft. 6 in.

Abrasive iron styles M, H, and G made 5/16 in. thick up to 6 ft. long; over 6 ft. long to 9 ft. 6 in. long made ⅜ in. thick; and styles V and J minimum thickness ⅜ in. regardless of width.

Castings not conforming to above made in sections unless special arrangement is made.

Surfaces

Treads are furnished in the three surfaces illustrated below, namely: Fluted, Cross Hatched and Plain.

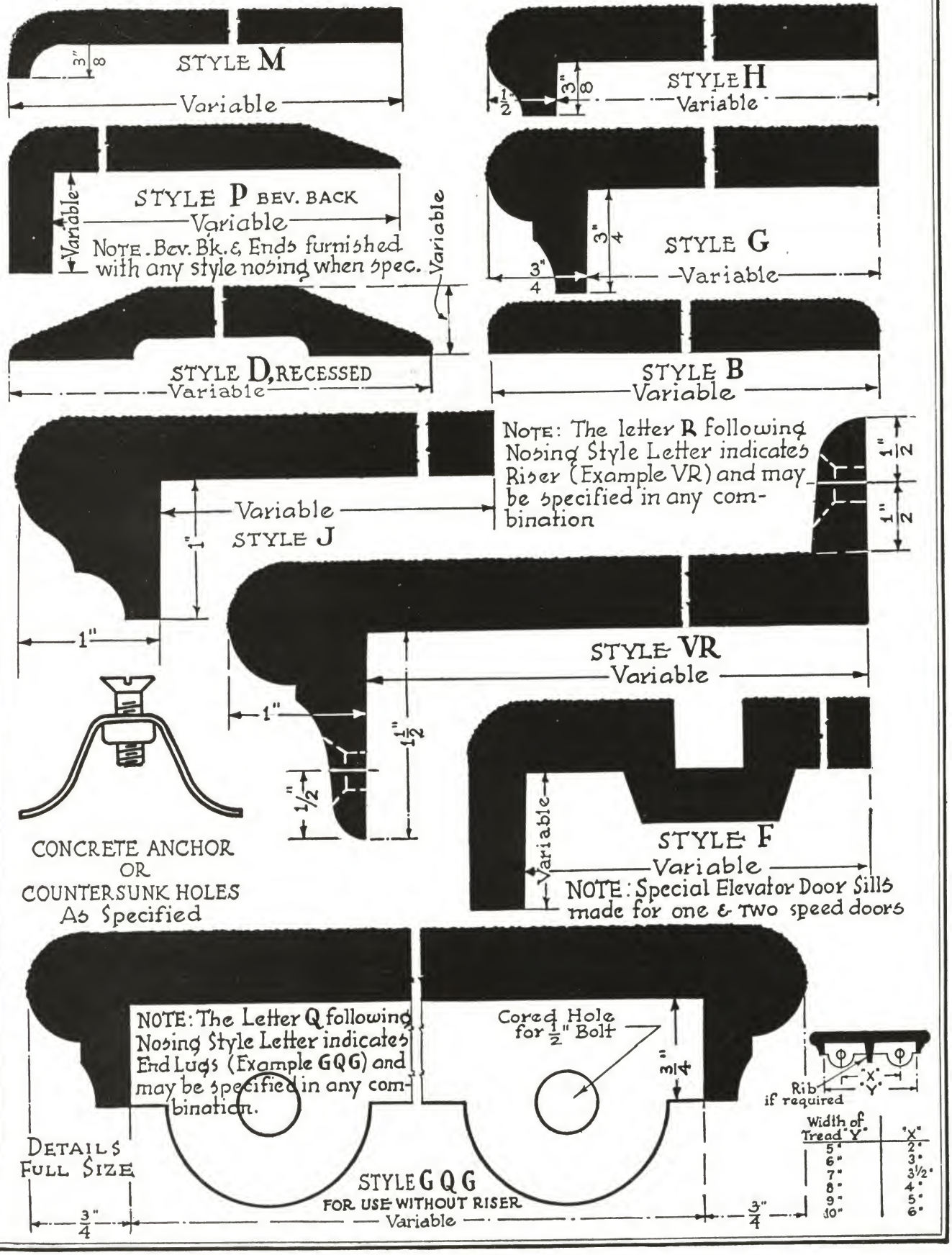


Fluted — Cross Hatched — Plain

Various Surfaces in Actual Size

MASON ABRASIVE IRON, BRONZE, ALUMINUM, NICKEL, SAFETY TREADS

For Thickness of Treads, See General Practice (DETAILS FULL SIZE)

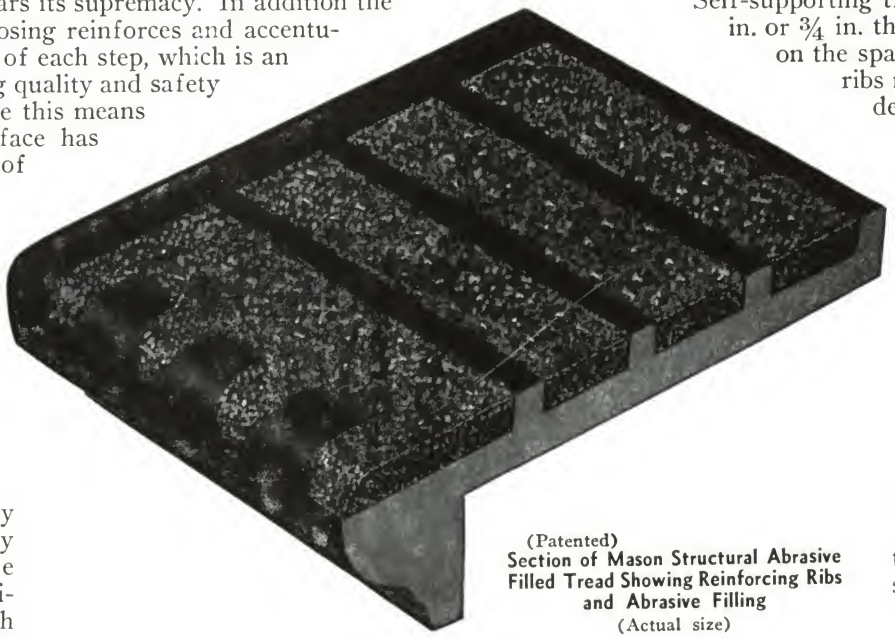


MASON STRUCTURAL ABRASIVE FILLED TREADS

Cast Iron or Cast Bronze with Abrasive Filling Extending ¼ to ⅜ Inch Into the Base Metal

Plain Surface

A stair tread cast with one-quarter inch or more deep channels to receive Mason Safety Abrasive Filling. This filling especially prepared and treated, has proven for over twenty-five years its supremacy. In addition the dental (toothed) nosing reinforces and accentuates the front edge of each step, which is an extra wear-resisting quality and safety feature. As a whole this means that when the surface has worn off, instead of being useless as a Safety Tread, Mason Structural Abrasive Filled Tread has just started its life of extreme usefulness as a real Safety Tread. Mason Structural Abrasive Filled Treads save money for owners not only by protecting the public against accidents, but in length of efficient safety life.



(Patented)
Section of Mason Structural Abrasive Filled Tread Showing Reinforcing Ribs and Abrasive Filling
(Actual size)

Widths and Lengths

Furnished in any tread width 3 in. and over, in lengths up to 90 in.

General Practice

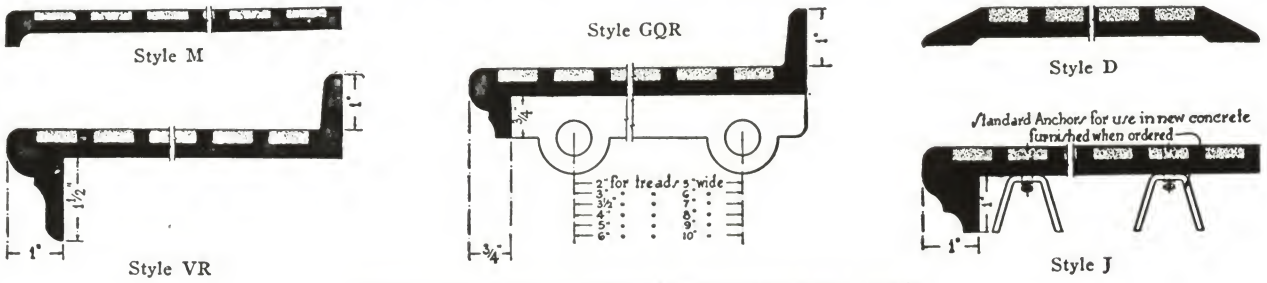
Self-supporting treads are made ⅝ in. or ¾ in. thick, depending upon the span and load. Truss ribs may be cast on under-side of treads when required. Platforms can be supplied up to 6 ft. long and 6 ft. wide.

Where treads are to be set in concrete, anchors will be supplied when specified. Minimum thickness of tread, ½ in.

Wearing Qualities

A superior safety tread designed for safe durability.

DETAILS OF MASON STRUCTURAL ABRASIVE FILLED TREADS



Nosings made similar to Mason Abrasive Metal Safety Treads

MASON DOOR THRESHOLDS

Brass—Corrugated Surface

Width 4 in.; height ½ in.
Width 5 in.; height ½ in.
Width 6 in.; height ½ in.
Furnished cut to length, drilled and countersunk

Rolled Steel Corrugated Surface Only

Width 4 in.; height ½ in.
Width 5⅜ in.; height ⅝ in.
Width 7 in.; height ⅝ in.
Furnished cut to length, drilled and countersunk.

MASON REPAIR METHODS

Practical for renewing old worn stair treads no matter what the construction. The many types of Mason Tread simplify the solution of any problem and we stand ready to assist without obligation.

Before repairing

After repairing

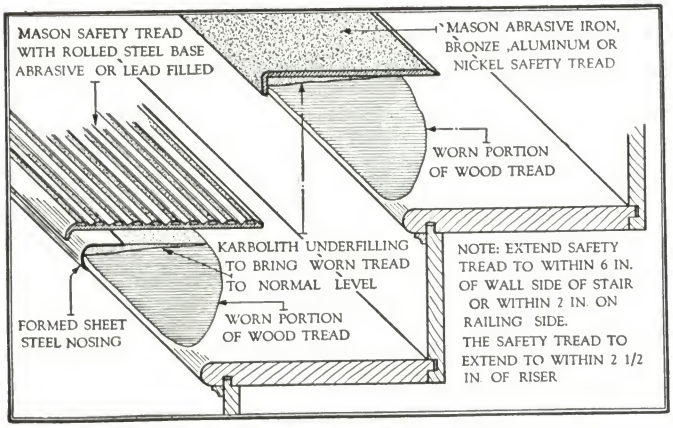
Mason Safety Treads as Applied to Worn Slate Treads

Detail showing two types of Mason Safety Tread cut away exposing worn step and Karbolith Plastic Under Filling (to support and build up to the true level).

Upper step shows use of Mason Abrasive Metal Tread Style "P."

Lower step shows use of Ribbed Type Mason Safety Tread with steel nosing (to cover up unsightly front edge and strengthen). Brass or Aluminum Nosings can be attached to this Safety Tread if desired in place of the formed steel nosing.

See Mason Extruded Brass and Aluminum Nosings.



MASON NON-SLIP LADDER SHOES

For Use in Industrial Plants, Stockrooms and Similar Locations

Mason Non-Slip Ladder Shoes hold the ladder securely to floors of iron, steel, wood or concrete. They provide an effective and inexpensive method of preventing falls caused by the slipping of a ladder on a smooth floor. The use of ladder shoes also obviates the necessity of having a second man to hold the ladder, resulting in saving of time and expense.

The swivel method of attaching the shoes to the ladder permits them to lie flat on the floor regardless of the angle at which the ladder is placed. The abrasive tread is long wearing and will retain its effectiveness indefinitely.

Shoes are fastened to the ladder with heavy bolts as shown in the illustration and are quickly and easily installed on new or old ladders or transferred from one ladder to another.

SIZES OF NON-SLIP LADDER SHOES

Size No.	Contact base, in.	Width of clevis, in.
1	5¼ x 1½	1¼
3	5¼ x 1⅝	1½
5	5¼ x 2	2

Shipping weight per pair 2½, 3, 3½ lbs. respectively.

DEL TURCO BROS., INC.

Contractors for Terrazzo and Mosaic

HARRISON, N. J.

NEW YORK OFFICE: 30 Church Street (Hudson Terminal Building)

NON-SLIP "INTEGRO" TREAD

Trade Mark Registered U. S. Patent Office

A New Departure in Safety Treads

The Del Turco Integro Tread is a reinforced precast terrazzo unit with inlaid alundum aggregate inserts which will provide the necessary foot friction under all wet or dry conditions and under all other requirements of use.

Advantages

Correct Non-slip Effect—The alundum aggregate inserts are made with an exactly predetermined degree of non-slip effect in exactly the proper location on tread and nosing. There can be no accidental defects in the mixture nor any variation in surface texture of the abrasive. The foot friction is positive under all wet or dry conditions and there is no corrugation or projection to catch and hold the foot or heel.

The Del Turco Integro Tread is a scientifically correct product.

Permanently Durable—Alundum is one of the hardest of substances, and in the form used in Del Turco Integro Treads it will outlast the needs and requirements of normal use.

Permanently in Place—The name Integro is descriptive of the fact that the alundum inlay is an *integral part* of the terrazzo construction of the tread. It cannot become loose or detached.

Attractive Appearance—The Del Turco Integro Tread is architecturally appropriate in design and the materials used are naturally and harmoniously decorative. Appearance is not sacrificed for the sake of utility. Patterns of inlay and color effects may be varied. Color contrast may be suppressed or achieved at will. Metal strips may be used to outline the alundum inlay where so desired.

Moderate in Cost—The Del Turco Integro Tread, completely installed, will compete favorably in price with any other material, system or device which approaches it in quality or effectiveness. It is a superior product of a quite "different" kind.

Broadly Adaptable—The Del Turco Integro Tread is suitable for use in all good construction and is particularly adaptable to buildings of public use where utilitarian and artistic effects must be combined.

Cleanliness—Del Turco Integro Treads are easily cleaned. There are no grooves to hold dirt and where the design shows contrast in color the effect of soiling or discoloration is disguised.

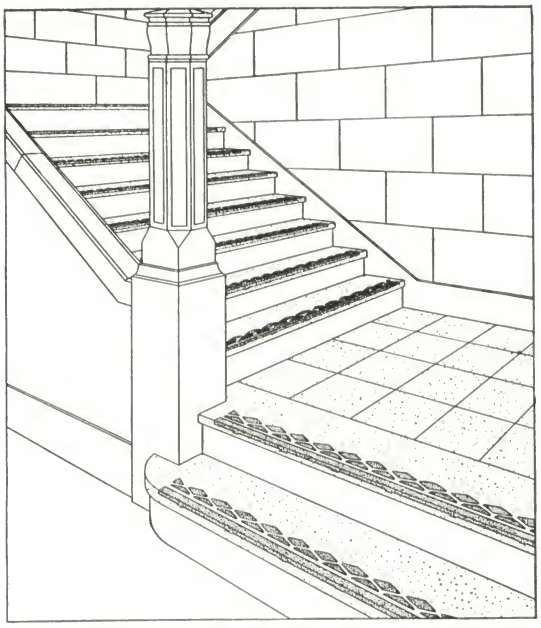
Manufacture and Distribution

The Del Turco Integro Tread is manufactured by the vibratory method in our plant, which is equipped with suitable machinery. It is properly reinforced, cured, finished and delivered to the building ready to be set in place. It is installed in cement mortar by marble setters in the same manner as marble.

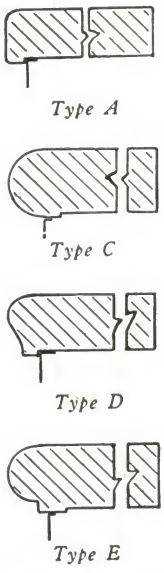
When installed over steel stairs, it should be secured to the sub-tread by means of our Dovetail Anchor method (shown on following page), the dovetailed channel for which is provided in the manufactured tread.

Below:

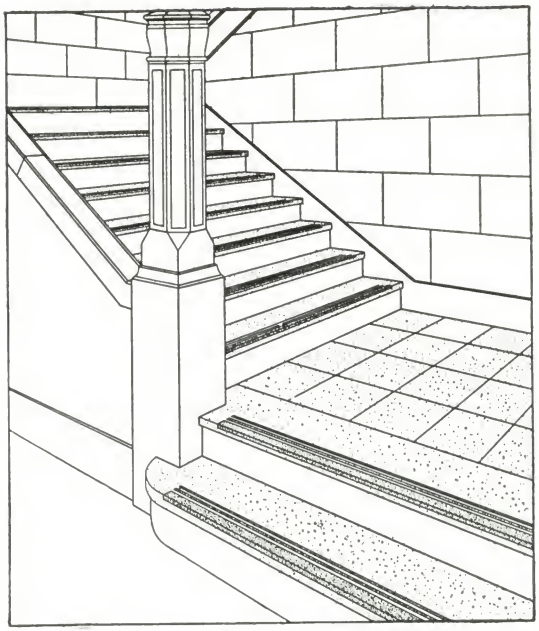
Stairs in The Public Service Building, Newark,, N. J.



Integro Tread, Diamond Pattern



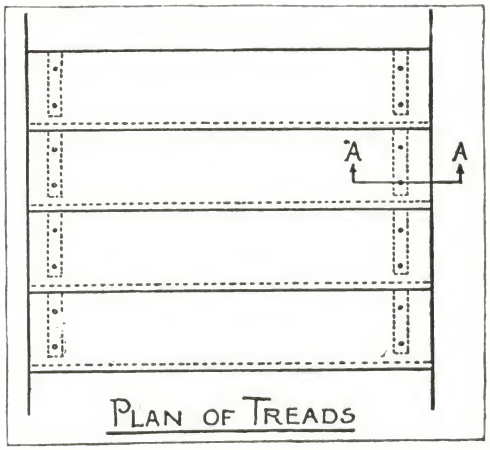
Types of Nosings



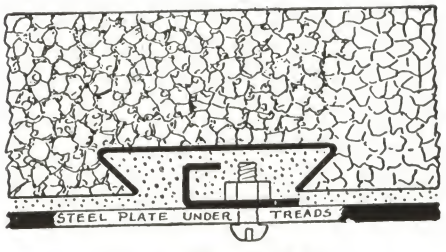
Integro Tread, Line Pattern

INTEGRO

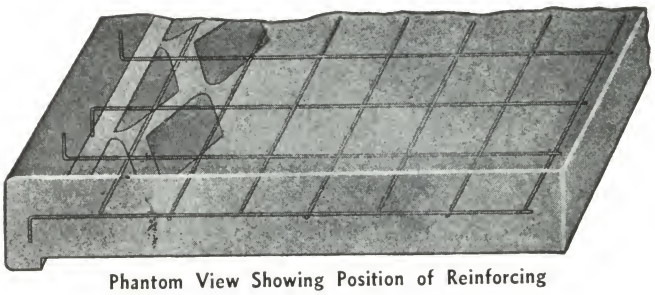
Trade Mark Reg. U. S. Pat. Off.



This method consists of placing a metal dovetail groove across the bottom of the tread at each end. Corresponding metal anchors are bolted to the steel sub-tread



Section Through "AA"



Phantom View Showing Position of Reinforcing

Lengths

Del Turco Integro Treads are made in lengths up to about 8 ft. It is always made to order, it being impractical to carry it in stock.

When so desired, treads and risers may be formed integrally.

We sell the Del Turco Integro Tread through marble contractors or we install it ourselves, when a marble contractor is not available.

Specifications (Under Marble Work)

Furnish and set wherever shown on the drawings Del Turco Integro Non-slip Treads as made by DEL TURCO BROS., INC., Harrison, N. J.

These treads shall be 1½ in. thick *(thicknesses recommended: Up to 4 ft. long, 1½ in. thick; from 4 ft. to 6 ft. long, 1¾ in. thick; over 6 ft. long, 2 in. thick)* with nosing as detailed and of colors as approved later from samples to be submitted.

These treads shall be delivered at the building in a finished state. They shall be set in cement mortar and when they occur on steel stairs, they shall be secured to the sub-tread by the Dovetail Anchor method in accordance with the details of the manufacturer, who shall provide the anchors as required. Drilling of steel sub-treads will be done by others.

The treads shall be protected with boards and the entire work shall be delivered in perfect condition.

Some Installations of Non-slip "Integro" Treads

Central Hanover Bank, 2 W. 49th St. Branch, New York, N. Y. (Stair to Basement) *Cross & Cross, Architects*
National City Bank, 9 W. 51st St., New York, N. Y. *Walker & Gillette, Architects*
New York Public Library, 5th Ave. and 42nd St., New York, N. Y.
Bell Telephone Laboratories, 463 West St., New York, N. Y. *Company's Engineer*
Abraham & Straus Department Store, Fulton St., Brooklyn, N. Y. *Starrett & Van Vleck, Architects*
Kresge Department Store, Newark, N. J. (Stair to subway). *Starrett & Van Vleck, Architects*
James McCreery Department Store, New York, N. Y. (35th St. Entrance). *Starrett & Van Vleck, Architects*
Union News Restaurant, Grand Central Station, New York, N. Y. *C. A. Schutze, Architect*
East Harlem Health Center, 158-164 E. 115th St., New York, N. Y. *H. C. Pelton, Architect*
French Line Steamship Pier 88, North River, New York, N. Y. *Department of Docks, Engineers*
Cunard Line Steamship Pier 90, North River, New York, N. Y. *Department of Docks, Engineers*
Public Service Building, 80 Park Place, Newark, N. J. *Company's Engineers*
Teaneck Armory, Teaneck, N. J. *Hugh A. Kelly & Associates*
Stores for W. T. Grant Company: White Plains, N. Y.; Bridgeport, Conn.; Hartford, Conn.; Pawtucket, R. I. *P. A. Cunnius, Architect*
Store for F. W. Woolworth Co., 5th Ave. and 39th St., New York, N. Y. *Starrett & Van Vleck, Architects*
Also 80 Nassau St., and 86th St. and 3rd Ave., New York, N. Y.; 408 Fulton St., Brooklyn, N. Y. *A. F. Winters, Architect*

MEMORANDA

MARCROME ART MARBLE & CAST STONE CO.

1200 No. Rock Hill Road, ST. LOUIS, MO. TELEPHONE, Republic 3360

343 So. Dearborn Street, CHICAGO, ILL. TELEPHONE, Wabash 1881

KANSAS CITY, MO. DALLAS, TEX. SAN ANTONIO, TEX. HOUSTON, TEX. PHILADELPHIA, PA.

Member of Cast Stone Institute

Products

MARCROME ART MARBLE
MARCROME NON-SLIP ART MARBLE
MARCROME PRE-CAST TERRAZZO
MARCROME PRE-CAST JOISTS
MARCROME SWIM POOL UNITS
ALGONITE CAST STONE
PRE-CAST CONCRETE SPECIALTIES

TRADE-MARK

Company

THE MARCROME ART MARBLE & CAST STONE CO. has a background of over thirty years experience devoted exclusively to the manufacture of pre-cast products. It is an organization of a technical personnel trained to serve the building profession.

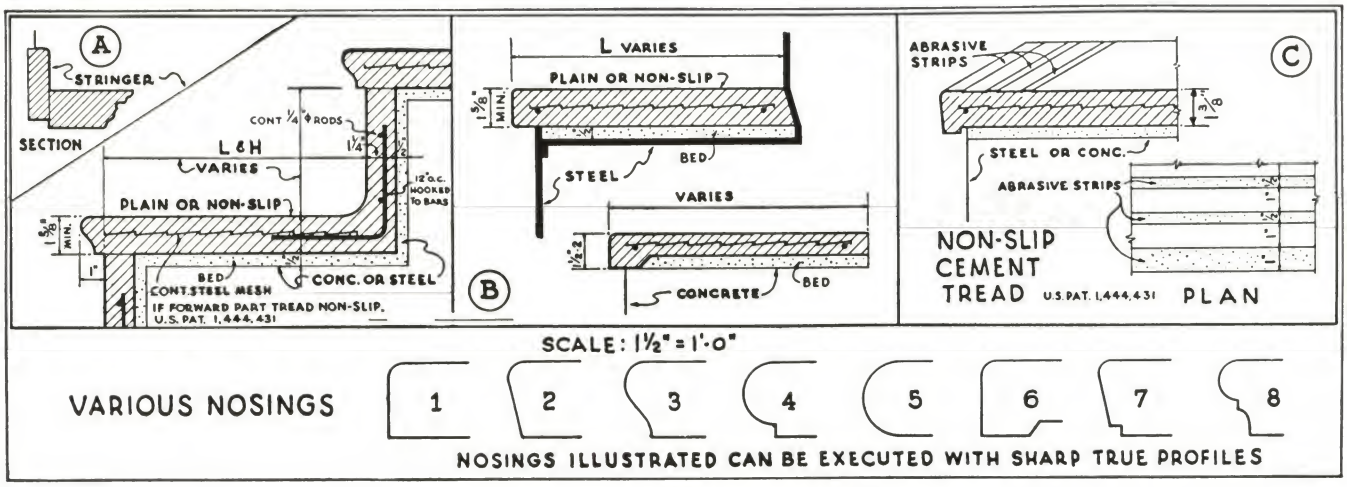
Uses

MARCROME products are used in nearly all types of buildings, including residential, commercial, industrial, institutional, federal, state, municipal, church, school, hospitals, swimming pools, etc.

Facilities

The factory is equipped to handle any type of work or any size order and is located for fast shipment to any part of the country. Various offices are available to give full co-operation.

DETAILS OF MARCROME STEPS AND TREADS



"A" shows MARCROME cove step with tread and riser, cast integral.
"B" illustrates MARCROME treads on steel or concrete sub-structure.
"C" shows MARCROME NON-SLIP tread for economy or industrial uses.

Description

MARCROME steps and stair treads and other products are scientifically reinforced and made by our own vibrating and curing process.

Correct reinforcement, tested Portland cements, steam curing, combined with raw materials of quality produce a product second to none in this field.

Non-Slip

MARCROME steps, treads and floors are made in plain or Non-Slip finish. For the small additional cost we recommend using Non-Slip for both longer wear and protection against slipping hazards.

We are Norton Company licensee for use of their alundum aggregate in our Non-Slip art marble products. This abrasive comes in colors and when properly handled, such as in the case of our MARCROME products it is effective under wet or dry conditions.

Marcrome Service

Our several district offices assure you of complete technical co-operation for any problem in the pre-cast field. We can take care of your needs regardless of your location.

Detail Sheets and Specifications

Our detail sheets and specifications are available on stairways shown above and on our other products.

Estimates and Suggestions

Quotations can be furnished promptly from any data submitted. We will also be glad to furnish suggestions and sketches without any obligation.

Patents

Our Non-Slip steps and treads are covered by U. S. Patent No. 1444431 in so far as applicable.

THE OHIO RUBBER COMPANY

Manufacturers of Orco Safety Treads and Flooring

WILLOUGHBY, OHIO

REPRESENTATIVES IN PRINCIPAL CITIES

THE COMPANY

THE OHIO RUBBER COMPANY is a pioneer in the development and application of processes for bonding rubber to metal and other surfaces. For many years, the Company has manufactured a wide range of rubber products for the automotive and other industries. More than 160 separate and distinct products are now being manufactured for the automotive industry alone. (More than half of the modern rubber-on-steel running boards used on present-day automobiles are manufactured by THE OHIO RUBBER COMPANY.)

THE ORCO SAFETY PRINCIPLE

Orco Safety Treads and Flooring (hard type) are made of a hard, tough, slightly flexible rubber base which is reinforced with a ¼-inch galvanized wire mesh. Alundum aggregate (a ceramically bonded aluminum-oxide abrasive) a product of the Norton Company, Worcester, Mass., is securely anchored into the wearing surface of the rubber. The same principle is employed in the manufacture of Orco *Soft* Rubber Safety Flooring, excepting that no wire mesh reinforcement is used in the soft flooring.

In both *Hard* and *Soft* types of Orco Safety Flooring Products, the Alundum abrasive aggregate is uniformly distributed throughout the wearing surfaces. There are no brittle points projecting above the wearing surface to break off under service. The Orco principle of non-slip efficiency is obtained by the abrasive quality of the Alundum aggregate as distinguished from the principle of obtaining a non-slip walking surface by mechanically roughening the wearing surface with projecting points, ridges, grooves, etc.

FEATURES OF ORCO SAFETY TREADS AND FLOORING

(1) Permanently Non-slip—The Alundum abrasive aggregate retains its original non-slip efficiency even under the most severe traffic conditions. It never wears smooth or slippery.

(2) Treads are Non-slip at Nosings—The Alundum abrasive aggregate is securely embedded in the rounded nosing which functions throughout the "step cycle" thereby providing maximum protection.

(3) Non-slip when Wet—Orco Safety Treads and Flooring are unaffected by rain, snow, sleet. Equal non-slip efficiency is assured with installations outdoors and indoors.

(4) Nothing to Catch Heels—There are no ridges, no grooves, no sharp corners or any other projecting parts exposed on the wearing surface to impair the exceptional non-slip efficiency of Orco Safety Treads and Flooring.

(5) Exceptionally Long Life—Installations in locations subjected to extreme conditions of wear have proved the remarkable durability of Orco Safety Treads and Flooring. No maintenance, no servicing is required.

(6) Harmonizing Appearance—Standard Orco Safety Treads and Flooring are "neutral" in respect to blending harmoniously with surroundings of every description.

(7) Simple, Economical Installation—Orco Safety Treads and Flooring are easily and quickly bonded with Orco Bonding Cement to wood, steel, concrete, terrazzo, stone and all types of composition flooring and stair tread surfaces. Where required, Orco Safety Treads and Flooring can be furnished drilled and countersunk for installing with screws or bolts.

PARTIAL LIST OF SUGGESTED USES

Orco Safety Treads and Flooring are recommended for use on stair treads and walkways in all types of new and existing structures where permanently non-slip factors of safety are required.

Other successful installations include floor areas around machinery, ramp and elevator floors, loading platform floors, floors and steps of buses and railway passenger cars, companionways and ladders of ships and all types of water craft and many other applications where permanently safe, non-slip walkways are required.

A FEW REPRESENTATIVE USERS

American Air Lines
Bethlehem Steel Corporation
Boston Subway System
Chandler's Dept. Store (Boston)
Chevrolet Gear & Axle Company
Childs Restaurants
Dodge Bros. Div. Chrysler Corp.
Endicott-Johnson Shoe Co.
General Electric Company
General Motors Corporation
Harvard University
Herald & News Tribune (Duluth)
S. S. Kresge Company
C. D. Mallory Line
Marshall, Field & Company
Montgomery, Ward & Company
National Twist Drill Co.
Pabst Brewing Company
Portland, Ore., Traction Co.
San Francisco City Hall
Sears, Roebuck & Co.
Square "D" Company
Swift & Company
State Capitol, Austin, Tex.
Telegraph Building, Detroit
University of Maine
U. S. Veterans' Hospitals
F. W. Woolworth Company

STANDARD SIZES OF ORCO SAFETY TREADS AND FLOORING

Orco Safety Treads

Widths: 3¾, 6⅛, 9⅛ and 12⅛ in. Lengths: 66, 72 and 84 in.
Thickness: ¼ in.

Orco Safety Flooring [Hard Type]

Made in flat plates in two standard sizes: 11¾x78 in. and 22x84 in. Small units for laying with broken or straight joints also available.
Thickness: ¼ in.

Orco Safety Flooring [Soft Type]

Made in standard single units up to 22x84 in. Small units for laying with broken or straight joints also available.
Thickness: ⅛ or ¼ in. as required.

SUGGESTED SPECIFICATIONS FOR ORCO SAFETY TREADS AND FLOORING (HARD TYPE)

Private Work (Suggested Form)

Furnish and install, where shown on accompanying drawings, Orco Safety Treads and/or Orco Safety Flooring (Hard type) as manufactured by THE OHIO RUBBER COMPANY, Willoughby, Ohio. Material shall consist of a reinforced base of a hard, tough rubber into which Norton Alundum Aggregates have been securely moulded. Treads and/or Flooring shall be cut by the manufacturer to sizes required.

Color or colors of material shall be as selected from the manufacturer's standard colors. Installation shall be in accordance with manufacturer's installation methods. (See accompanying details.)

Public Work (Suggested Form)

All Safety Treads and/or Flooring shall consist of a reinforced base of hard, tough rubber into which aluminum-oxide abrasive aggregates have been securely moulded. The reinforcement shall be wire mesh embedded in the base and extending to all edges and into the nosings. The abrasive aggregates shall be well distributed throughout all top surfaces and nosings and shall be exposed to form a uniform non-slip wearing surface. The units shall have a thickness of ¼ in. throughout all parts, excepting the lip of nosings, which shall be not less than ⅛ in. thick. Units shall be cut to sizes required. Color or colors shall be as selected by the architect.

Suggested Specifications for Orco Safety Flooring (Soft Type) Work Included

This contractor shall furnish all necessary materials and provide all labor required in the furnishing and installing of all Safety Flooring as shown on the accompanying drawings and as hereinafter specified, briefly listed as follows:

(Here list areas to be covered or refer to room schedule of materials.)

Materials

(a) (This paragraph is suggested for use in specifications for Private Work.)

All Soft Safety Flooring shall be "ORCO" as manufactured by THE OHIO RUBBER COMPANY of Willoughby, Ohio. Material shall consist of a soft rubber base into which Norton Alundum Aggregates have been securely bonded.

(b) (This paragraph is suggested for use in specifications for Public Work.)

All Safety Flooring shall consist of soft rubber into which aluminum-oxide abrasive aggregates have been securely moulded. The abrasive aggregate shall be well distributed throughout the surface, and shall be exposed to form a uniform non-slip wearing surface. Floor units shall be either ⅛ or ¼ in. in thickness *(specify which)*.

(c) Color or colors of material shall be as selected from manufacturer's standard colors. The contractor shall submit samples and obtain the architect's approval, in writing, before any material is ordered.

(d) Safety Flooring in floor panels shall consist of square edge units of sizes as indicated on the drawings. (These may be obtained in single units up to 22 in. wide and 84 in. long, or may be obtained in smaller units for laying with broken or straight joints.)

(e) Where it is required that safety flooring material finish flush with adjoining floor coverings, specify that the contractor shall carefully cut present work to true and even lines, and shall form level beds to receive Safety Flooring material.

ORCO SAFETY TREAD CONSTRUCTION

Protection

In cases where installation of Safety Flooring is to be made prior to completion of rough work in the building, or where considerable travel is likely to occur during construction, it is suggested that the specifications require that heavy paper or board coverings be used to protect the finished Safety Flooring until completion of the building. This may be made a part of the general temporary protection to be furnished by the general contractor or made a part of the work of the contractor for safety material, as conditions require.

Suggested Specifications of Sub-Floors over Which Soft Orco Flooring Is to Be Installed

(a) New Wood Sub-floors—All wood underfloors should be not less than ¾ in. thick, tongue and groove, kiln dried flooring, boards not more than 3 in. wide, surface nailed and finished true and level to ⅛ in. plus the thickness of Orco Flooring below the finished floor line.

(b) Old Wood Floors—Replace worn boards with new lumber, thoroughly surface nail all loose and springy boards and sand floor smooth and even.

Installation

(a) Wood Floors—Prior to installing soft Orco Safety Flooring, cement 1¾ lb. of deadening felt paper to wood floor with linoleum cement, in opposite directions to underfloor, with seam butted, not lapped; felt to be carefully fitted at wall lines. Roll felt thoroughly with 150-lb. 3-section roller after applying to floors.

(b) Concrete Sub-floors—Concrete floors to be steel-troweled to a smooth, level finish to the thickness of the Orco Flooring, below the finished floor line. All concrete must be absolutely dry, thoroughly bonded to fill, and must not have a chalky, scaly, or sandy finish.

Concrete laid in contact with ground either on or below grade shall be thoroughly membrane-waterproofed. Expansion joints or cracks shall be filled with a crack filler, level with floor surface. If concrete floors have been painted, all paint shall be removed before installing Orco Flooring. (Dirt and dust will impair the cement bond.)

(c) Concrete Floors—Orco soft safety flooring shall be cemented direct to concrete with Orco cement, spread evenly in a thin coat on floor with a 12-in. plasterer's trowel. Lay out each space carefully with borders, if used, of suitable width. Take up discrepancies in room dimensions with borders. Scribe, fit and cement border material along two adjacent walls, being careful that inside edges of border are cut vertically and meet at an exact right angle in corner of room. Then cement field flooring, starting at corner where corners adjoin. Spread cement on not more than 10 sq. ft. of floor area at one time, pushing flooring firmly into place with a sliding motion so that cement gets into the joints.

Before cementing the last pieces of flooring on two remaining sides of the room, lay these floor pieces loosely over the border already scribed and fitted to these walls. Then cut border to perfect fit along outside edges of the floor pieces and cement remaining floor pieces and border.

Roll thoroughly in both directions. Clean surplus cement from surface of flooring, using a cloth moistened with denatured alcohol or gasoline.

Do not wash floor until five days after installation.

Orco Bonding Cement for All Types of Orco Safety Treads and Flooring

Orco Bonding Cement is made exclusively for use in bonding Orco Hard Rubber Safety Treads, Orco Hard Rubber Safety Flooring and Orco Soft Rubber Safety Flooring to the surfaces of *wood, concrete, marble, steel, etc.*

Preparation of Surfaces—All surfaces over which Orco Treads and Orco Flooring are to be applied should be level and dry—free from paint, varnish, rust, and loose dirt. *Note:* Clean surfaces permit better adhesion.

Instructions for Applying Cement—Apply a thin coat of Orco Cement about $\frac{1}{64}$ in. to the surface of the tread over which the Orco Tread is to go and to the back surface of the Orco Tread or Flooring with a trowel.

When both of the cemented surfaces are tacky to the touch, slide the Orco Tread or Orco Flooring material into place with a siding sideways or zig-zag motion—working treads or flooring into place in the above manner will eliminate air pockets and permit the cement to adhere uniformly. In the case of treads, make certain of getting sufficient cement to the underside of the Orco Nosing so that good adhesion will be made at this point.

Any excess cement that is present after the Orco Tread is installed can be readily removed with gasoline.

Recommended—Cemented treads or flooring be not walked upon for at least 12 hours.

Note: One gallon of Orco Cement applied $\frac{1}{64}$ in. thick will permit the installation of approximately 50 sq. ft. of treads or flooring.

Where Orco Treads or Flooring are to be cemented over worn subtreads or floors, the worn surfaces should be leveled with a suitable filler; information furnished upon request.

THE SAFE TREAD COMPANY, INC.

Iron, Bronze and Aluminum Abrasive Metal
for Structural and Industrial Purposes

TELEPHONE
BArclay 7-8885

30 Vesey Street, NEW YORK, N. Y.

BRANCH SALES OFFICES IN ALL PRINCIPAL CITIES

"SAFE TREAD" ABRASIVE METALS

Listed Under Re-Examination Service by Underwriters' Laboratories

THE SAFE TREAD COMPANY, INC., is headed by a past President of the American Society of Safety Engineers, who pioneered in the designed and production of abrasive metal products for structural purposes, and who, for over 25 years, has been one of the leading figures in the nation-wide effort to overcome the serious hazards of unsafe walkways.

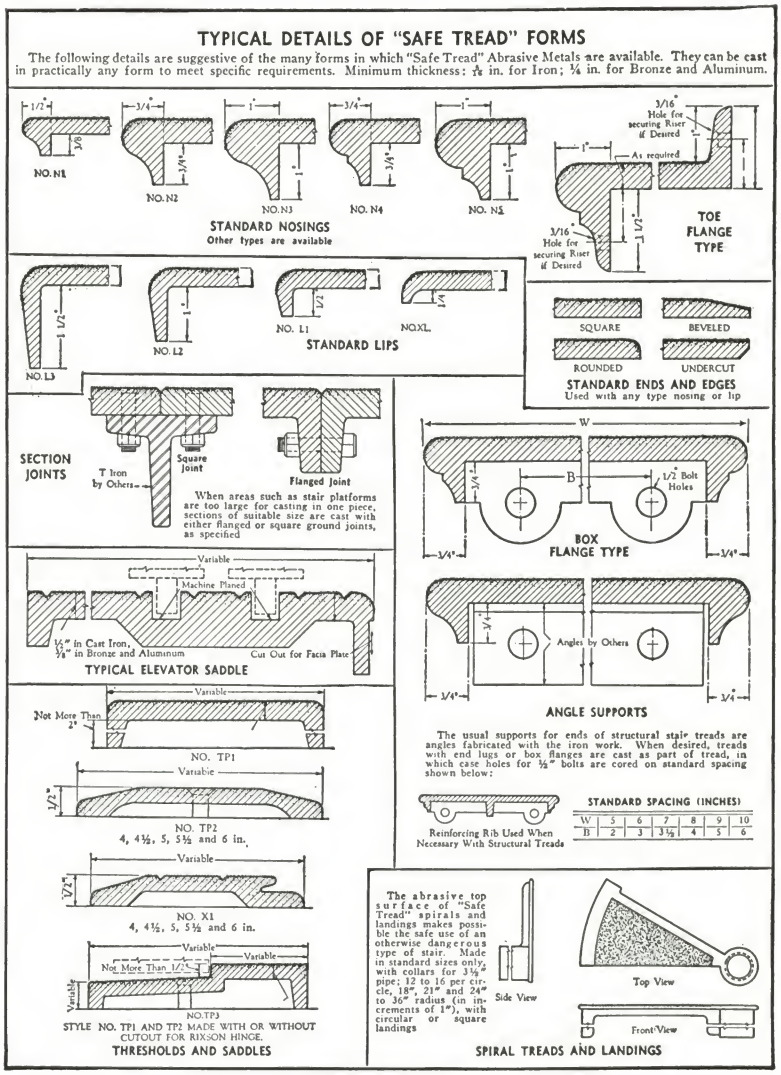
Associated with him are competent engineers, manufacturers, and sales representatives, specially trained in this particular field.

The facilities of one non-ferrous and three iron foundries and one of the leading abrasive grain manufacturers are utilized in the production of "Safe Tread" products, *under exclusive material, design and process patents and licenses.*

With a background of such sound experience, practical knowledge, manufacturing facilities, and *legal right* "Safe Tread" products may be specified with full confidence that they will provide the best available enduring anti-slip walkway surface.

Scope of Use

"Safe Tread" Abrasive Metals are suitable for *inside* or *outside*—wherever slipping is to be prevented or excessive wear withstood, in either new or repair work. It has met the most exacting requirements and has been furnished for many of the outstanding projects during the past five years; by direct purchase under the rigid inspection of the U. S. Navy; on contracts for public buildings, including postoffices, hospitals, schools, etc., and for private work including office buildings, stores, churches, dairies, packing houses, factories, railroads, subways, etc.



The "Safe Tread" Process

"Safe Tread" Abrasive Metal is made by *patented processes* which produce anti-slip treads having the diamond-hard abrasive:

(1) Deeply embedded in and firmly held by the metal *without an intervening film of foreign material* to weaken the grip of the metal on the abrasive. (When the abrasive grains are sprayed or coated with a foreign substance to prevent washing or floating as the molten metal enters the mold, the metal cannot make intimate contact with them—a condition that clearly affects the durability of the tread.)

(2) Projecting slightly to give a safe footing under all conditions. (Unless the grains project slightly above the metal to give the necessary "bite" the surface is no more anti-slip than metal without any abrasive); and

(3) Closely distributed in the surface and over the nosing edge so that the metal is protected from wear, and safety assured at the vital point.

Specifying and Ordering

When specifying "Safe Tread" Abrasive Metals, the kind of metal, *surface design,* thickness and form desired should be indicated. When ordering or requesting estimates, complete information should be furnished. Detail drawings by the architect or shop drawings by the ornamental iron worker assure closer estimates and accurate filling of orders.

Consultations on walkway safety problems and tentative estimates on preliminary surveys may be obtained without obligation.

ONLY "SAFE TREAD" IS FURNISHED IN FIVE DIFFERENT SURFACES

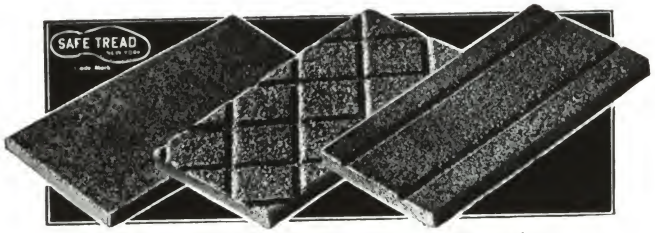
Standard: *Plain—Hatched—Grooved.* Special: *"Duo-Plane"—"Sovac"*

STANDARD SURFACES

Plain, Hatched, Grooved

These surfaces, illustrated at the right, are common to all makes of abrasive metal. They are furnished by THE SAFE TREAD CO., INC. in all the various forms in cast iron, bronze, nickel and aluminum, in which such materials are cast.

Plain and Hatched surfaces are preferable for stair treads, nosings, platforms, etc., where grooves parallel to the edge would be a hazard. The grooved surface is used mostly for door saddles of various types.



Plain Hatched Grooved

SPECIAL SURFACES — "DUO-PLANE" AND "SOVAC"

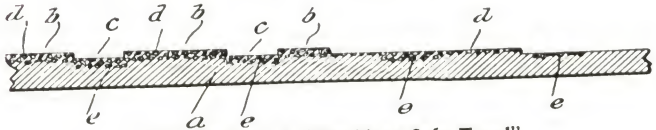
Exclusive Products of the Safe Tread Company, Inc.

To meet the demand for still more durable anti-slip quality, and to provide certain characteristics not obtainable in the common or Standard Surfaces of the "Safe Tread" and other makes of abrasive metals, two special surfaces known as *"Duo-Plane"* and *"Sovac"* have been developed. After service tests of several years under severest conditions they are recommended as the best available treads for their respective purposes.

"Duo-Plane"

The "Duo-Plane Safe Tread" embodies a new principle by providing an upper or initial contact plane composed of the tops of *squares* (*b.b.*) about ¾ x ¾ in. separated by rectangular section valleys about $\frac{1}{16}$ in. deep and $\frac{3}{32}$ in wide. Abrasive grains (*d.d.* and *e.e.*) are embedded at the time of casting, in both the squares and bottoms of the valleys to a depth of about $\frac{3}{32}$ in. in each. When elevations are worn down, contact begins on anti-slip surfaces at bottoms of the valleys, thus providing *double life. (In Standard Surfaces there is only one wearing plane thickness of abrasive.)* This type is especially desirable for maximum durability and effectiveness. Cast in all metals in practically any form to meet specific requirements.

"Duo-Plane Safe Tread"
(Patented)



Cross Section of "Duo-Plane Safe Tread"

"Sovac"

"Sovac" is a surface of great durability and effectiveness, that will not "clog-up" under grease, oil, mud, dust, etc. It was developed through the combined efforts of *safety engineers* in the oil industry and THE SAFE TREAD COMPANY, INC.

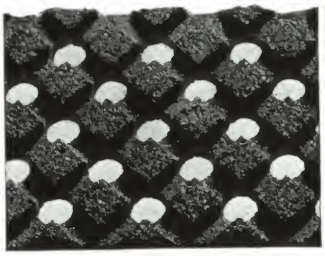
Features are:

(1) Diamond-hard abrasive surface is actually non-slip and extremely resistant to wear.

(2) Deep, wide, cross-hatched grooves take dirt and muck that would otherwise clog up walking surface.

(3) Diagonal grooves, facilitate cleaning.

(4) Large holes at groove intersection make treads actually self-cleaning when supported on angle irons or grating; or as a self-supporting "structural" tread.



"Sovac" Safe-Tread

(5) Made *only of cast iron* with aluminum oxide abrasive grains embedded in wearing surface, it is not susceptible to corrosive action of weather, acid, fumes, or oil.

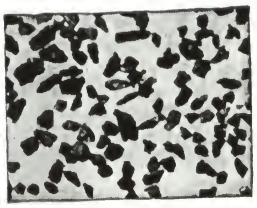
"Sovac" Safe Tread is cast only in standard sizes for use in service pits, concrete steps, steel grid or wooden steps, ramps, ladders, platforms, etc.

"SAFE TREAD" ABRASIVE GRAINS

For Embedding in New Cement and Terrazzo Floors to Add Durability and to Prevent Slipping

These solid crystalline aluminum oxide grains, made in arc type electric furnaces at Niagara Falls, are supplied in specified sizes to meet all conditions of service. When embedded in granolithic and terrazzo floors they produce a slip-proof surface and add to the resistance of the floor. They are non-porous and do not tear out in finishing.

Recommended for use in building entrances, railway stations, ramps and other surfaces where safety and durability are important considerations.

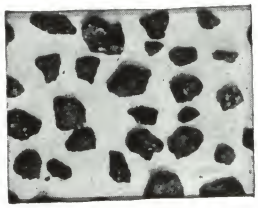


Size 12-30

Application

For Heavy Duty Floors—Finish coat ½ to 1 in. thick, using a regular 1:2 mix, should be: 4 parts cement, 1 part abrasive grains, 7 parts sand.

For Light Duty Floors—The abrasive grains should be evenly sifted over the surface of finish coat (about ½ lb. per sq. ft.) and troweled in.



Size 6-12

"Safe Tread" Abrasive Grains are furnished in kegs or bags.

Minimum order 100 lbs.

Prices and samples on application.

THE SAFETY PROCESSING CO.

"Saf-on" Safety Stair Tread

33 North Hazel Street, YOUNGSTOWN, OHIO

NEW YORK OFFICE: SAFETY PROCESS CO., INC., 39 Cortlandt Street, New York, N. Y.

Wire at Our Expense for Address of Nearest Sales Office

THE "SAF-ON" PROCESS INSURES SAFETY AND LONG LIFE WITHOUT AFFECTING THE APPEARANCE

Description

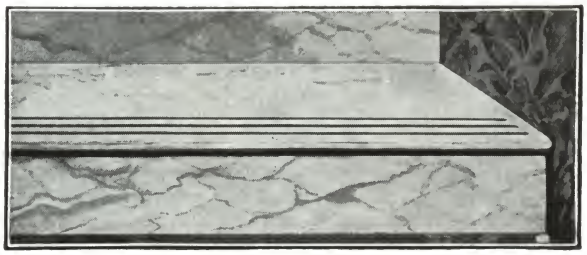
Saf-on may be applied to new or to existing steps. Three grooves are cut near the nosing and parallel to it. These are then filled with "Saf-onite" as shown in the detailed drawing. On curved treads, by use of special machines, the grooves are cut to conform with the contour of the tread, thereby assuring perfect non-slip, visible, safety from every angle without affecting the appearance of the tread.

Saf-on is an amazing combination of materials resulting in extreme hardness and a permanent bond with the matrix. It is our belief that there is nothing like it known to industry.

Write for Descriptive Booklet.

Saf-on

TRADE-MARK
Reg. U. S. Pat. Off.



This Is a "Saf-on" Step

A "Saf-on" Step is provided with an unprecedented degree of safety. Beauty of the stairs is not destroyed. The impregnated "Saf-onite" protrudes above the surface a distance of only $\frac{1}{32}$ in. This material has abrasive properties that render a definite safeguard

Ramps, Vestibules and Elevator Thresholds

Beyond its use on staircases of every kind there are many other needs for the application of the "Saf-on" Process—such as ramps, vestibules, elevator thresholds, etc.

Finest Workmanship Guaranteed

Work of applying "Saf-on" Process is conducted only by craftsmen of highest ability and long training who use our patented machines for grooving marble, terrazzo and other materials. There is no danger of steps being marred or chipped in any manner. We guarantee a finished job of finest character.

Products

Saf-on—Applied to existing stairs even when badly worn.

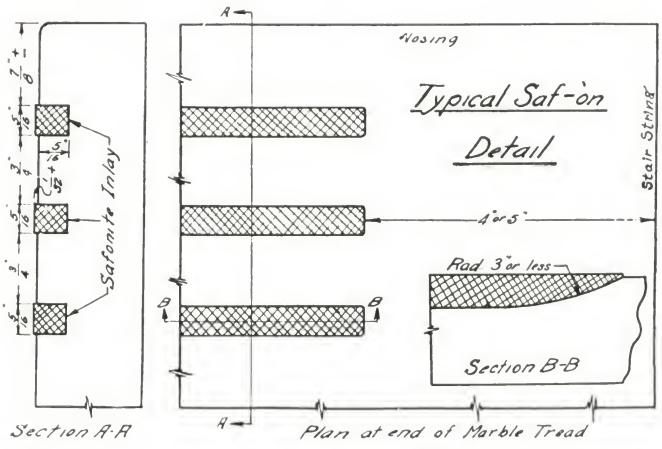
Saf-on Treads—For new buildings or for replacements, we sell complete treads of either terrazzo or marble with Saf-on installed in our plant. Wire collect for details. We guarantee to quote your contractor a price competitive with anything that compares in results.

Saf-on Stairs—Complete stairs of terrazzo with Saf-on inserts—entirely self-supporting, nothing shows but polished terrazzo. We furnish detail designs for each case. The cheapest *safe, fireproof, presentable* stair on the market.

Specifications

Install treatment known as "Saf-on" in each tread and platform of all marble and (or) terrazzo stairs. This treatment to consist of providing three (3) grooves of proper width and depth near the nosing of each stair tread, platform and landing, as per detail, into which "Saf-onite" shall be applied in such a manner as to finish true and straight, slightly above the top surface of the tread and so as to form a safe non-slip surface. The "Saf-onite" when hardened shall adhere to the marble and become an integral part of the tread. This treatment to be installed by THE SAFETY PROCESS COMPANY, INC., 39 Cortlandt Street, New York, N. Y. [THE SAFETY PROCESSING CO., Youngstown, Ohio].

A special Specification, meeting Federal requirements and accepted by the Treasury Department will be furnished on request.



Cuyahoga County Courthouse, Cleveland, Ohio

Write for Descriptive Booklet on "Saf-on"

UNIVERSAL SAFETY TREAD INC.

111 Perry Street, LOWELL, MASS.

Products

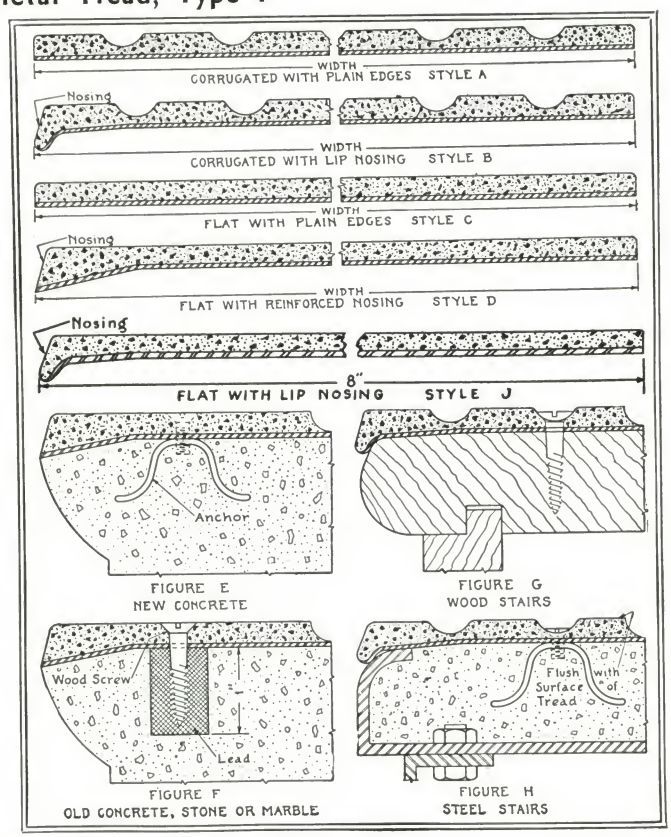
UNIVERSAL ANTI-SLIP METAL TREAD (Abrasive) Type I.
UNIVERSAL SAFETY TREAD (Lead filled) Type II.
Also Brass and Aluminum Nosings, Brass and Steel Door Saddles.

General Uses

For installation on all stairs, landings, ramps, platforms, elevator thresholds, saddles, ladders, frames, coalhole covers and all surfaces that might become slippery.

Universal Anti-Slip Metal Tread, Type I

Type I Style D Flat Surface (with Reinforced Nosing)
Enlargement to show positive impregnation of abrasive $\frac{3}{16}$ in. deep with hard lead binder making a solid mass.

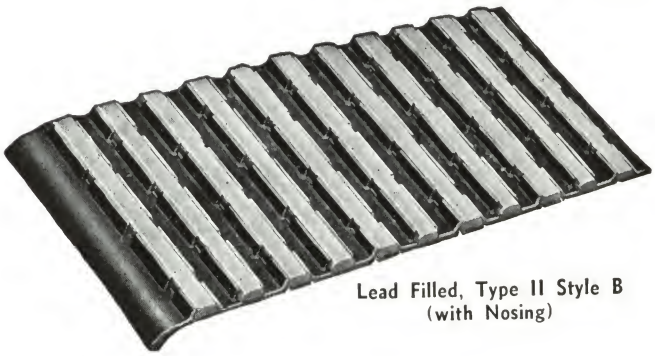


This tread is constructed of a tinned steel baseplate to which are attached abrasive grains by means of a lead binder. The diamond hard grains are distributed throughout the entire thickness to the baseplate, and the lead fills all voids. This construction gives a moisture-proof, non-porous, scuff-proof, and anti-slip tread for its entire life and will withstand the most severe wear under heavy traffic. A flat or corrugated surface can be furnished as preferred.

During many years of experience in manufacture, we have perfected this safety tread in which there are no hard or slippery metal surfaces exposed. This tread fulfills the most exacting requirements.

Sizes—Universal Anti-Slip Tread Type I can be furnished in practically any width up to 8 in. and in any specified length up to 10 ft., either with or without nosing.

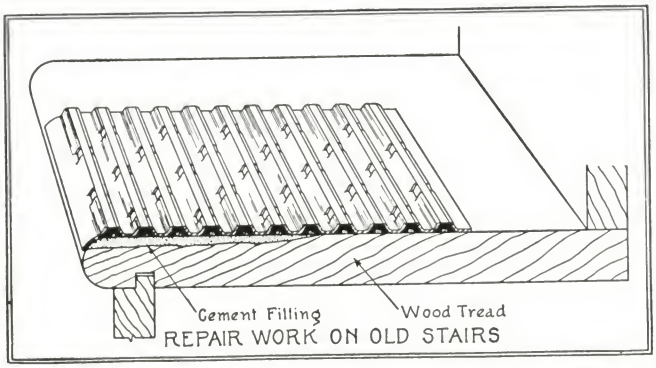
Universal Safety Tread (Lead Filled), Type II

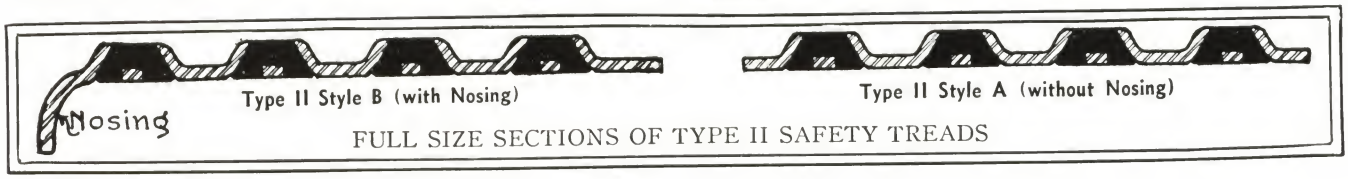


Lead Filled, Type II Style B (with Nosing)

This tread is constructed of a steel, brass, aluminum or stainless steel baseplate, punched to receive the non-slip lead inserts which are rolled in and firmly clamped. The lead fills all perforations and a non-slip surface is presented for the life of the tread. A minimum of hard supporting metal and a maximum of non-slip lead form the wearing surface, and the lead exposed between the base supports or clamps results in perfect non-slip edges at all times.

Sizes—Universal Safety Tread Type II can be furnished in practically any width up to 12 in. and in any specified length either with or without nosing.

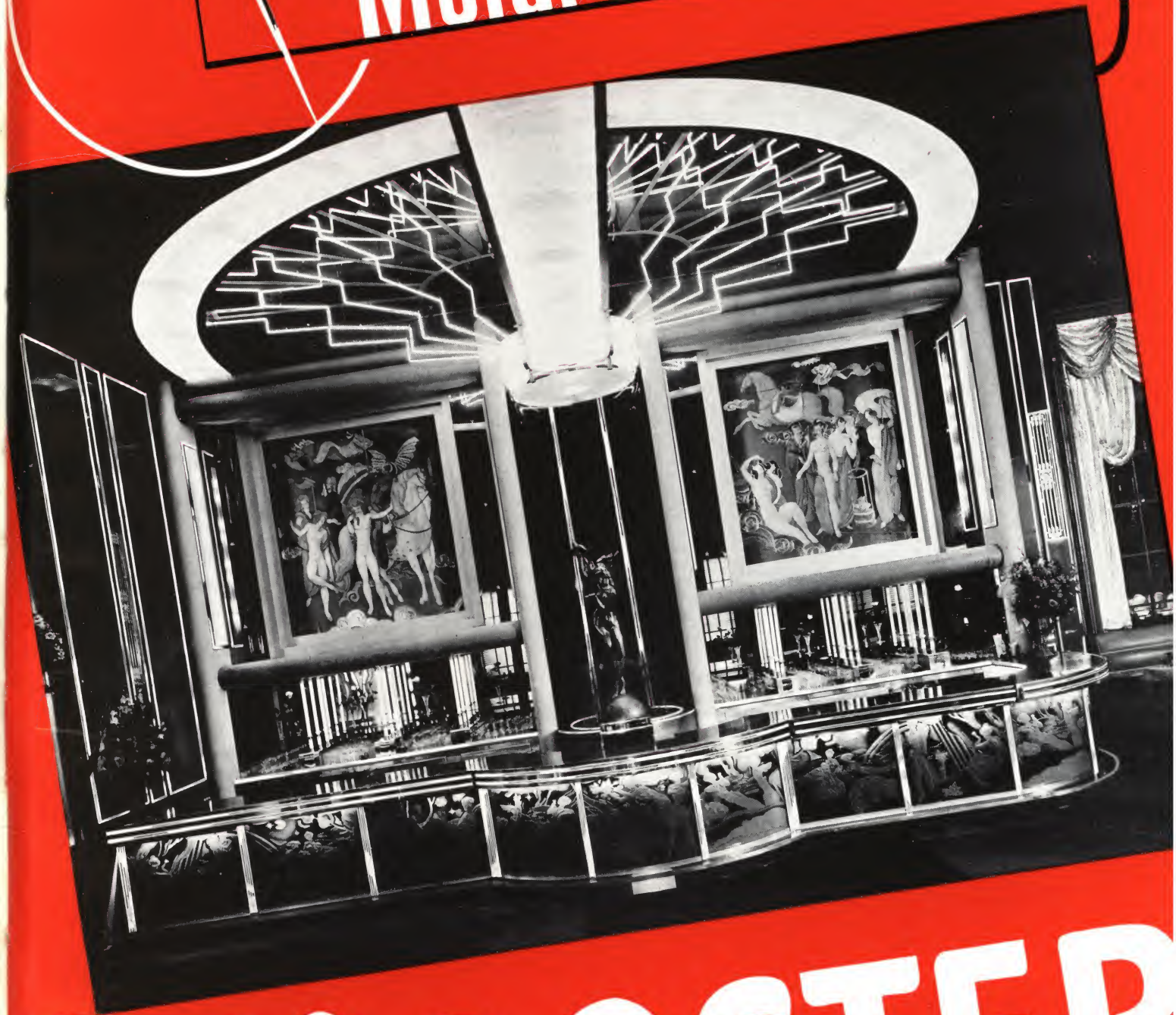




FULL SIZE SECTIONS OF TYPE II SAFETY TREADS

MEMORANDA

Metal Products by



WOOSTER

WOOSTER

STAIR TREADS
THRESHOLDS
SILLS
WALL TRIM
NOSING
EDGING

THE complete line of Wooster metal products consists of two distinct types of metal safety treads, Safe-Groove and Abrasive Cast; Metal Mouldings which include three distinct types of rolled and extruded shapes in a wide variety of modern designs; Nosings and Edgings which embrace not only the well-known standard shapes, but many new, distinctive designs.

Wooster Safe-Groove Treads are made in many standard widths which may be combined to obtain any desired width. They are produced in three different metals, Steel Base, White Alloy Base and Yellow Brass Base, with anti-slip ribs of Lead, or Abrasive Grits.

Wooster Abrasive Cast Treads are made in four different metals, cast iron, cast aluminum, cast bronze and cast nickel-bronze. Being cast to order, they may be made in practically any shape and in any desired size within certain limitations. The line includes Abrasive Cast Thresholds, Elevator Sills and Floor Plates.

Wooster Metal Mouldings include three different types, a one-piece type with moulding and base combined as one integral unit; a two-piece type consisting of the moulding and a separate clip base; a Driv-On type with fastening nails, or bolts, firmly attached for quick, easy installation.

Wooster Nosings and Edgings are produced in White Alloy metal and Yellow Brass. In addition to the original, standard shapes which have been used for many years for the protection of floor coverings, there are many new distinctive shapes done in strictly modern design which have aided materially in broadening the scope and usefulness of this type of trim.

CHECK LIST OF WOOSTER PRODUCTS

WOOSTER SAFE-GROOVE TREADS

Steel Base with Lead, or Abrasive Grits Anti-slip
White Alloy Base with Lead Anti-slip.
Yellow Brass Base with Lead, or Abrasive Grits Anti-slip.

WOOSTER ABRASIVE CAST TREADS

Cast Iron with Abrasive Grit surface.
Cast Aluminum with Abrasive Grit surface.
Cast Bronze with Abrasive Grit surface.
Cast Nickel Bronze with Abrasive Grit surface.

WOOSTER COMBINATION TREAD AND NOSING

Sure-Gard Nosing, White Alloy and Yellow Brass.
Sure-Foot Nosing, White Alloy and Yellow Brass.
Safe-Step Nosing, White Alloy with Lead Anti-slip.
Safe-Edge Nosing, White Alloy with 1 rib of Lead Anti-slip, and Yellow Brass with 1 rib of either Lead or Abrasive Grits Anti-slip.
Safe-Grip Nosing, White Alloy with 2 ribs of Lead Anti-slip, and Yellow Brass with 2 ribs of either Lead or Abrasive Grits Anti-slip.

WOOSTER NOSING AND EDGING

Security Nosing in White Alloy or Yellow Brass.
Majestic Nosing in White Alloy.
Unique Nosing in White Alloy. Also made with Drip-proof top.
LaSalle Nosing in White Alloy.
Security Edging in White Alloy or Yellow Brass.
Divider Edging in White Alloy or Yellow Brass.

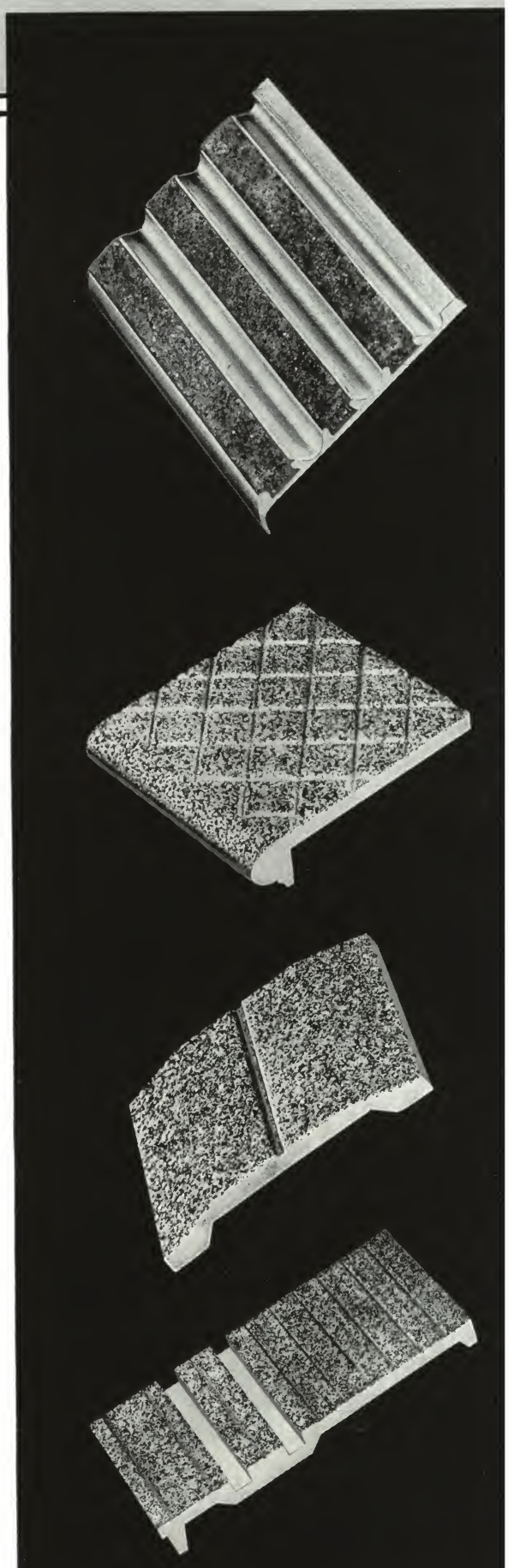
WOOSTER METAL WALL TRIM

One Piece Type made in White Alloy and Yellow Brass.
Driv-On, or Bolt-On made in White Alloy and Yellow Brass.
Drip-Proof Edging in White Alloy.
Reversible Edging in White Alloy.
Bar Edging in White Alloy or Yellow Brass.
Flat Top Bar Edging in White Alloy or Yellow Brass.
Offset Binder Bar in White Alloy or Yellow Brass.
Carpet Binder Bar in White Alloy or Yellow Brass.
Clip-Base Type in White Alloy and Yellow Brass in two designs and in Stainless Steel, with separate copper-coated steel base.

WOOSTER PRODUCTS INC.
WOOSTER . . . . . OHIO

Wooster SAFETY TREADS

for SAFETY, BEAUTY, UTILITY, AND PERMANENCE



WOOSTER ABRASIVE CAST TREADS

Made from four different metals, indicated by their trade names. They are produced by the modern, patented Wooster casting process. Abrasive Grits are deeply impregnated and securely held to the walking surface by a hard, wear-resisting matrix of metal. Made in standard widths from 2″ to 44″ and any standard length up to 9′6″. Furnished with plain, fluted or cross-hatched walking surfaces. Curved sections of any desired radius at slight additional cost. Metal and finishes are as follows:

FERROGRIT—Cast Iron with Abrasive Grits, finished black.

ALUMOGRIT—Cast Aluminum with Abrasive Grits. Standard finish bright silvery grey.

BRONZOGRIT—Cast Bronze with Abrasive Grits. Standard finish dark Old Gold.

NICKLOGRIT—Cast Nickel Bronze with Abrasive Grits. Standard finish bright silvery grey.

Wooster Abrasive Cast Thresholds

Wooster Abrasive Cast Thresholds are made from exactly the same metals and by the same patented process as Wooster Abrasive Cast Treads and are furnished with the same standard finishes. Abrasive Grits anti-slip walking surface. Ten standard types including flat, bevelled, weather-strip and weather-stop types. Ends mitered as desired. Cutouts for Shelby, Rixson, Bommer and other checking floor hinges. Standard widths 4″ to 12″; standard lengths up to 9′6″ in one section; greater lengths made in sections.

Wooster Abrasive Cast Elevator Sills

Made from the same metals and by the same process as Wooster Abrasive Cast Treads and Thresholds. Standard finishes are the same as described for treads. Standard sections include sills for Biparting doors, Single Speed, Two Speed and fixed panel type doors. Door guide grooves are machine planed, straight and true. Made with or without lugs, and with drilled and tapped recess for fascia plates.

Wooster Safe-Groove Treads

Made from three different metals, Steel, White Alloy and Yellow Brass. Ribs of Anti-slip $\frac{3}{16}$″ deep alternate with $\frac{3}{16}$″ deep narrow grooves. Overall thickness of tread $\frac{1}{4}$″. Angle or square back. Cut to any desired length up to 16 ft. Lip or Long Nose standard width sections may be combined with standard width flat sections to cover any desired width. Treads with Abrasive Grits Anti-slip may be curved to any radius down to 4″ to 9″ depending upon width.

STEEL BASE is made in 7 standard sections and a variety of widths from $2\frac{1}{2}$″ to 6″. Lead or Abrasive Grits Anti-slip. Standard finish black.

WHITE ALLOY BASE is made in 9 standard sections and a variety of widths from $2\frac{3}{4}$″ to 6″. Lead Anti-slip only. Standard finish Woosterlite high luster; Satin or Matte on request.

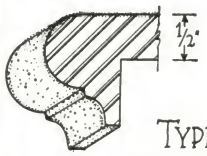
YELLOW BRASS BASE is made in 11 standard sections and a variety of widths from $2\frac{1}{8}$″ to 6″. Lead or Abrasive Grits Anti-slip. Standard finish Woosterlite high luster; Satin or Matte on request.

TYPICAL INSTALLATIONS

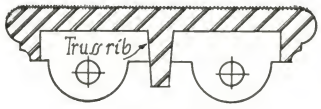
Elementary School, Maryville, Calif.
High School, Lykens, Ohio
Wheaton College, Wheaton, Ill.
High School, Odessa, Tex.
Republic Steel Corporation, Cleveland, Ohio
Wallace Stores, Lubbock, Tex.
Shillito Department Store, Cincinnati, Ohio
Armory, St. Marys, Ohio
Gymnasium, North Bend, Ore.
Water Softening Plant, New London, Ohio
Brentwood Housing Project, Washington, D. C.
College Court Housing Project, Louisville, Ky.
Phillip Morris Tobacco Co., Richmond, Va.
W. T. Grant Co., Tampa, Fla.
State Hospital, Peoria, Ill.
State Hospital, Anna, Ill.
Cudahy Packing Co., Salt Lake City Plant
Sears, Roebuck & Co., Lima, Ohio
H. J. Heinz Co., Pittsburgh, Pa.
F. W. Woolworth Co., New York City, N. Y.
Montgomery Ward & Co., Chicago, Ill.
Swift & Co., Chicago, Ill.

ABRASIVE CAST STAIR TREADS AND NOSINGS

FERROGRIT • BRONZOGRIT • ALUMOGRIT • NICKLOGRIT



TYPE 106-107-108



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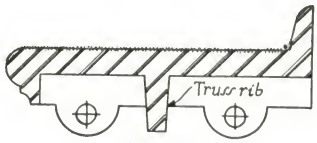

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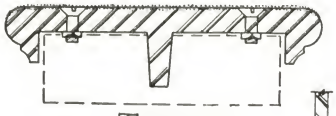

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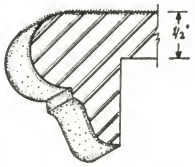

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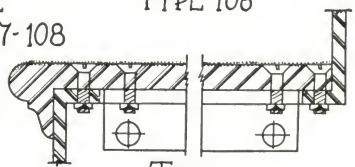
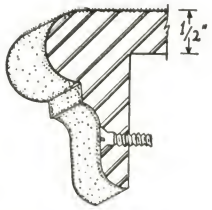
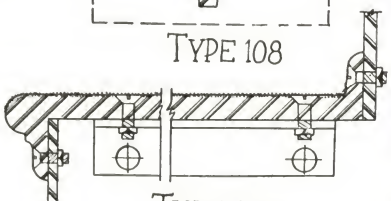


TYPE 104

Treads extending from Stringer to Stringer, Mounted on end angles and bent risers furnished by others.

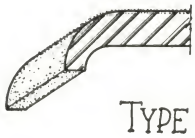


TYPE 105

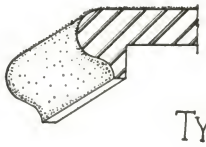


TYPE 105

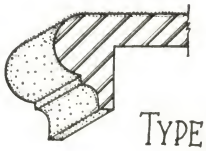
Treads extending from Stringer to Stringer, Mounted on Straight risers furnished by others.



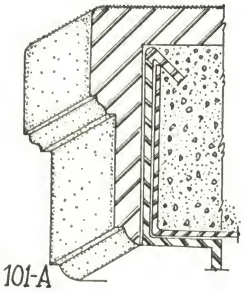
TYPE 101



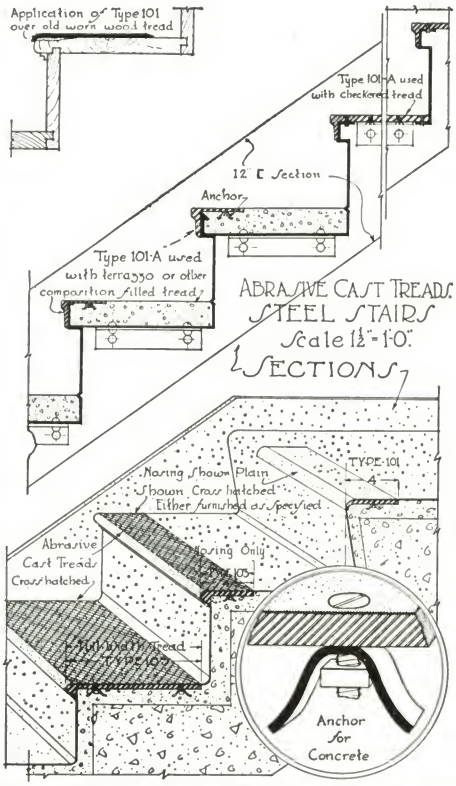
TYPE 102

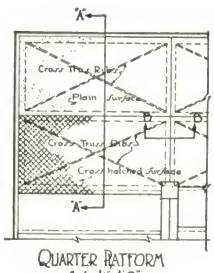


TYPE 103



TYPE 101-A





QUARTER PLATFORM
Scale ½"=1'0"

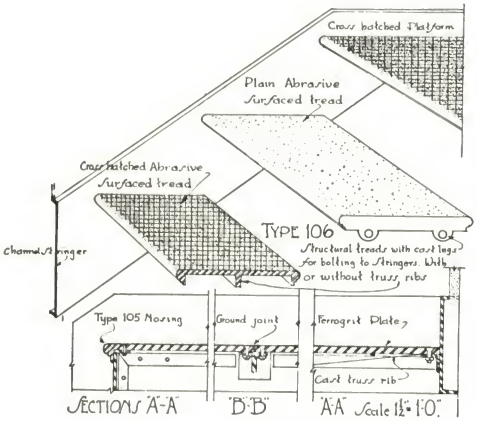


TABLE of STANDARD PRACTICE

WIDTH	LENGTH	TYPE 104	TYPE 105	WIDTH	LENGTH	TYPE 106	TYPE 107	TYPE 108
Up to 12"	Not over 9'6"	3/16"	3/16"	Not over 12"	x 42"	3/16"	3/16"	3/16"
12 to 24"	" " 9'6"	3/16"	7/16"	" " 12"	x 45"	½"	½"	½"
24 to 32"	" " 9'6"	½"	½"	" " 11"	x 57"	½"	½"	½"
32 to 44"	" " 6'6"	3/16"	3/16"	" " 12"	x 60"	3/16"	3/16"	3/16"

Platforms not over 44" x 78" Larger in sections
Patent № 1920244. Other Patents Pending

TABLE of STANDARD PRACTICE

Types 101 - 102 - 103: Note 101A minimum 3/16".
Surface or Overall Width.

Thickness	Ferrogrit	Bronzogrit	Nicklogrit	Alumogrit	Length
¼"	Not made	Up to 4"	Up to 4"	Up to 9"	Not over 9'6"
5/16"	Up to 6"	" " 9"	" " 9"	" " 18"	long except
3/8"	" " 12"	" " 15"	" " 15"	" " 30"	when width
7/16"	" " 24"	" " 24"	" " 24"	" " 44"	exceeds 32" then
½"	" " 32"	" " 30"	" " 30"	" " 44"	length must
5/8"	" " 44"	" " 44"	" " 44"	" " 44"	not exceed 6'6"

WOOSTER PRODUCTS INC, WOOSTER OHIO.

Printed in U.S.A.

ABRASIVE CAST DOOR SILLS AND SADDLES

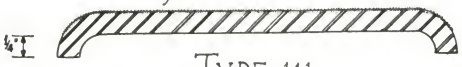
FERROGRIT • BRONZOGRIT • ALUMOGRIT • NICKLOGRIT

TYPE 100

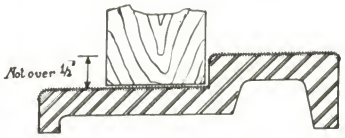
TYPE 121

FERROGRIT
BRONZOGRIT
ALUMOGRIT
NICKLOGRIT

TYPE 110
When used with Floor hinge cutouts refer to details below

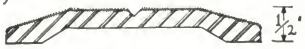


TYPE 111
When used with Floor hinge cutouts refer to details below



TYPE 112
Weather Proof Threshold

TYPE 120

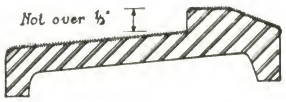


TYPE 115

TYPE 109
Hook strip available when desired

TABLE of STANDARD PRACTICE TYPES 100~109~110~111~115~119~120~121.				
Up to	FERROGRIT	BRONZOGRIT	ALUMOGRIT	NICKLOGRIT
6" wide	3/8" thick	3/16" thick	3/16" thick	3/16" thick
12" wide	7/16" "	3/8" "	3/8" "	3/8" "

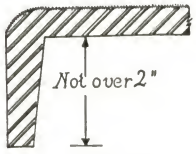
OVER 9'-6" MADE IN SECTIONS



TYPE 113
Weather Proof Threshold for Floors of unequal height

TYPE 119
Hook strip available when desired

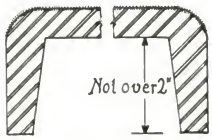
WOOSTER ABRASIVE CAST ELEVATOR SILLS



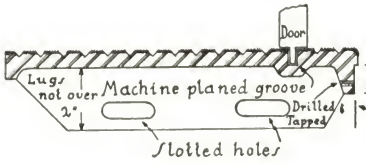
TYPE 116

TABLE of STANDARD PRACTICE		
Ferrogrit ——	Not less than	1/2" thick
Bronzogrit ——	Not less than	3/8" thick
Alumogrit ——	Not less than	3/8" thick
Nicklogrit ——	Not less than	1/2" thick

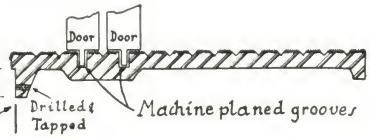
Elevator Door Sills over 9'-6" made in sections
Patent № 1920244 Other Patents Pending



TYPE 117

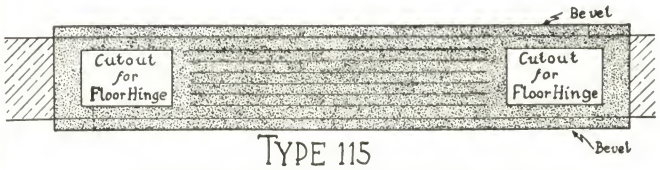


TYPE 401 with cast lugs

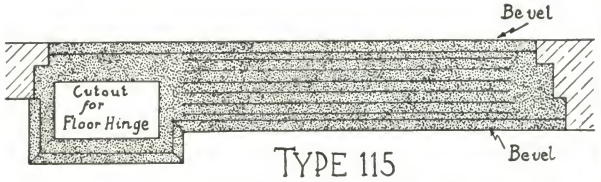


TYPE 401 without cast lugs

for two speed type elevator enclosure



TYPE 115
With Two Shelby or Rixson Style Cutouts



TYPE 115
With One Shelby or Rixson Style Cutout

WOOSTER PRODUCTS INC. WOOSTER, OHIO.

Printed in U.S.A.

SAFE GROOVE STAIR TREADS

STEEL BASE WHITE ALLOY OR YELLOW BRASS
ABRASIVE GRITS OR LEAD ANTI-SLIP

Full Size Section №33 Steel Base only 3½" wide Abrasive Grits or Lead Anti-Slip with Nosing and Angle Back.

½ Full Size Section №36 Steel Base only 4 in. wide Abrasive Grits or Lead Anti-Slip with Nosing and Angle Back.

Full Size Section №32 Steel Base only 3 in. wide Abrasive Grits or Lead Anti-Slip with Nosing and Square Back

½ Full Size Section №35 Steel Base only 6 in. wide Abrasive Grits or Lead Anti-Slip without Nosing

½ Full Size Section №34 Steel Base only 4 in. wide Abrasive Grits or Lead Anti-Slip without Nosing

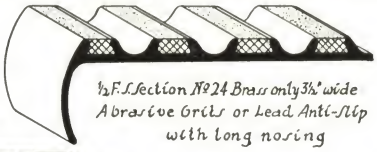
½ Full Size Section №31 Steel Base only 2½" wide Abrasive Grits or Lead Anti-Slip without Nosing

Similar White Alloy Sections
not illustrated, Lead Filler only

No. 40 - 4 in. with lip nosing
No. 41 - 4 in. without nosing
No. 42 - 6 in. without nosing
No. 43 - 3 in. without nosing
No. 44 - 2¾" with long nosing
No. 45 - 4⅝" with long nosing
No. 46 - 3 in. with square back

Full Size Section №21 Brass only 2¾" wide Abrasive Grits or Lead Anti-Slip with long nosing

Full Size Section №22 Brass only 3 in. wide Abrasive Grits or Lead Anti-Slip with lip nosing and square back



½ F.S. Section №24 Brass only 3½" wide Abrasive Grits or Lead Anti-Slip with long nosing

½ F.S. Sect. №20 Brass only 2⅛" wide Abrasive Grits or Lead Anti-Slip with long nosing

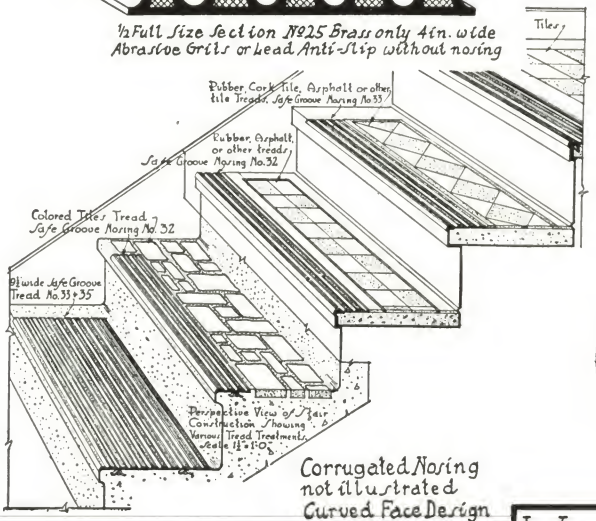
½ F.S. Sect. №23 Brass only 3½" wide Abrasive Grits or Lead Anti-Slip ¢ lip nosing

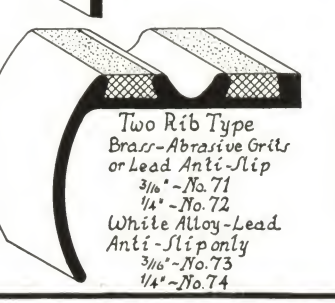
½ F.S. Section №27 Brass only 3" wide Abrasive Grits or Lead Anti-Slip no nosing

½ Full Size Section №26 Brass only 6" wide Abrasive Grits or Lead Anti-Slip no nosing

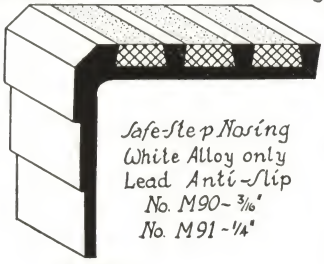
½ Full Size Section №28 Brass only 5¼" wide Abrasive Grits or Lead Anti-Slip with lip nosing

½ Full Size Section №25 Brass only 4 in. wide Abrasive Grits or Lead Anti-Slip without nosing



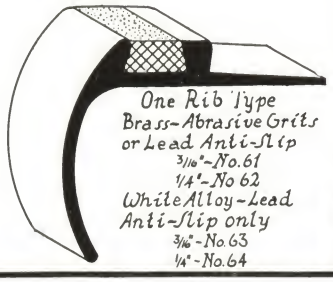


Corrugated Nosing
White Alloy - Brass
No. M-95 | 1/8" | No. M-75
No. M-96 | 3/16" | No. M-76



Safe-Step Nosing
White Alloy only
Lead Anti-Slip
No. M90 - 3/16"
No. M91 - 1/4"

Two Rib Type
Brass - Abrasive Grits or Lead Anti-Slip
3/16" - No. 71
1/4" - No. 72
White Alloy - Lead Anti-Slip only
3/16" - No. 73
1/4" - No. 74



One Rib Type
Brass - Abrasive Grits or Lead Anti-Slip
3/16" - No. 61
1/4" - No. 62
White Alloy - Lead Anti-Slip only
3/16" - No. 63
1/4" - No. 64

Corrugated Nosing not illustrated
Curved Face Design

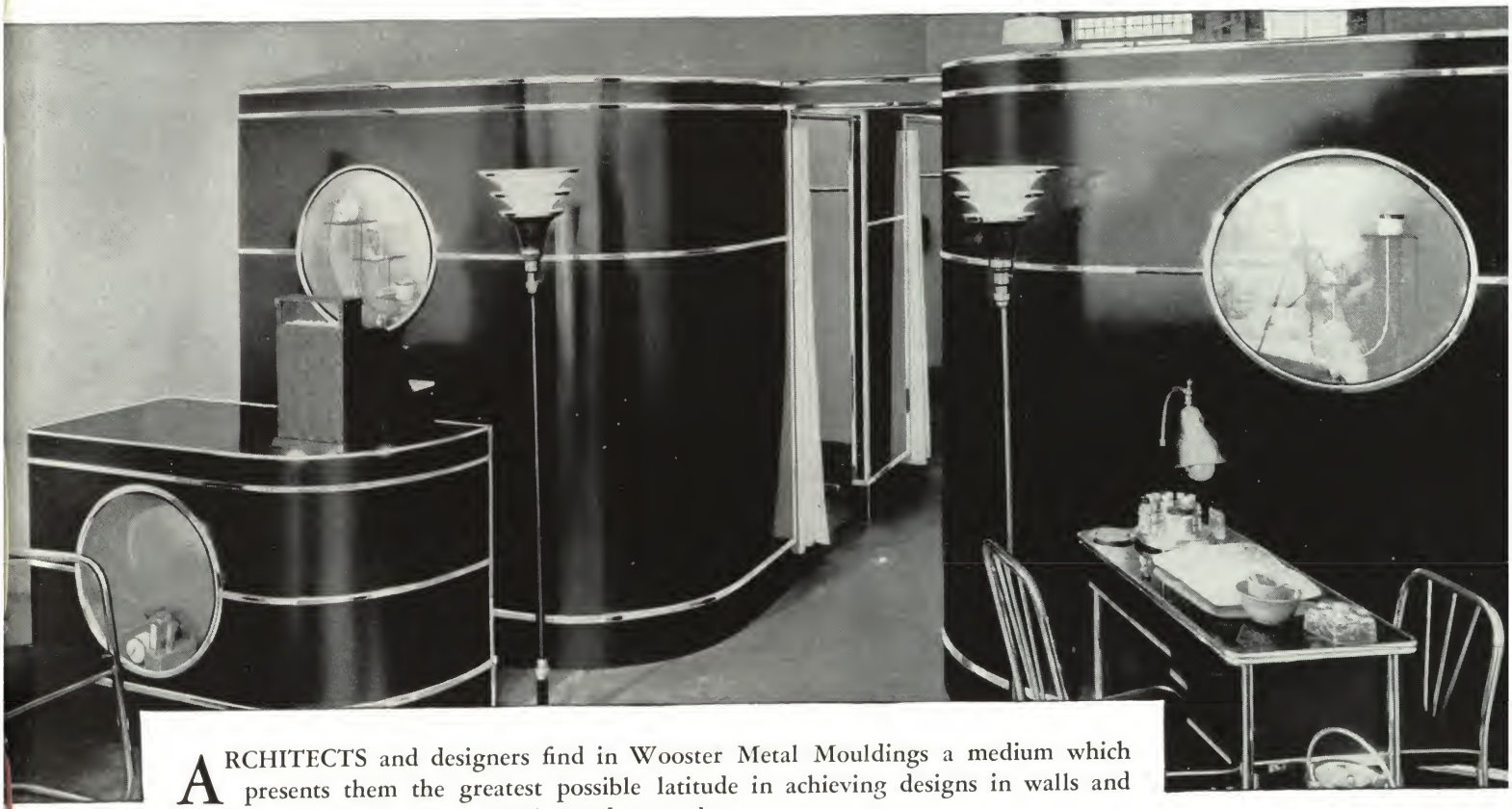
White Alloy		Brass
No. 96	1/8"	No. 75
No. 97	3/16"	No. 76
	1/4"	No. 77

WOOSTER PRODUCTS INC. WOOSTER, OHIO.

Printed in U.S.A.

WOOSTER

METAL MOULDINGS FOR WALLS, CABINETS AND COUNTERS



ARCHITECTS and designers find in Wooster Metal Mouldings a medium which presents them the greatest possible latitude in achieving designs in walls and other interiors in keeping with the modern mode.

Wooster Metal Mouldings find great favor with contractors because of extreme simplicity of application. Among the three types is one that exactly fits any installation requirement—One-Piece Type which nails or screws direct to the wall; the wall covering entirely conceals nails or screws . . Driv-on or Bolt-on Type with nails or screws clinched in short spaces in the grooved base of the moulding . . Clip-Base Type; the moulding is held by clip in base which is first nailed to the wall—a very effective and versatile method of application. No special equipment nor unusual skill is called for in any case.

Alterations and replacements can always be made without great cost or inconvenience.

The quality of materials and fine durable finish of Wooster Metal Mouldings give assurance that the job will be structurally correct and present the finest appearance. They acually glorify the materials they secure in place.

Even when low cost is an important consideration, Wooster Metal Mouldings will be found quite in line; for while their quality and finish are of the first order, they are not expensive.

No matter what the job, you can better fulfill the conditions, attain finer results, with Wooster Metal Mouldings, for Wooster provides the greatest variety of styles, finishes and methods of application.

TYPICAL INSTALLATIONS

Fred Sharby Theatre, St. Albans, Vt.
Bancroft Hotel, Saginaw, Mich.
Kennth S. Kassler Residence, Princeton, N. J.
Stone Bros., Canton, Ohio
James McMillan Residence, Greenwich, Conn.
Nurses Home, St. Francis Hospital, Peoria, Ill.
Bickford's Restaurant, New York City
Central Democratic Club, Harrisburg, Pa.
Lindner Co. Store, Cleveland, Ohio
United Drug Co., Boston, Mass.
Metropolitan Theatre, Boston, Mass.
Coca-Cola Bottling Plant, Indianapolis, Ind.
Thompson Restaurant, Louisville, Ky.
Don Bosco Seminary, Newton, N. J.
Redondo Union High School, Redondo Beach, Calif.
High School, Menasha, Wisc.
Witham Memorial Hospital, Lebanon, Ind.
Stanford Assembly Hall, Palo Alto, Calif.
St. Cecelia Church, Chicago, Ill.
St. Michael's Home, Glen Ridge, S. I., N. Y.
High School, Montpelier, Idaho
Law School Bldg., L.S.U., Baton Rouge, La.
Civil Court Bldg., St. Louis, Mo.
F. W. Woolworth Co. 100 Stores
Cannon Shoe Co. 21 Stores
G. C. Murphy Co. 9 Stores
Amherst College, Amherst, Mass.
Alabama Power Co., Selma, Ala.

WOOSTER PRODUCTS INC., WOOSTER, OHIO

Representatives in the principal cities

New York office: 101 Park Ave.

Chicago office: 324 W. Washington St.

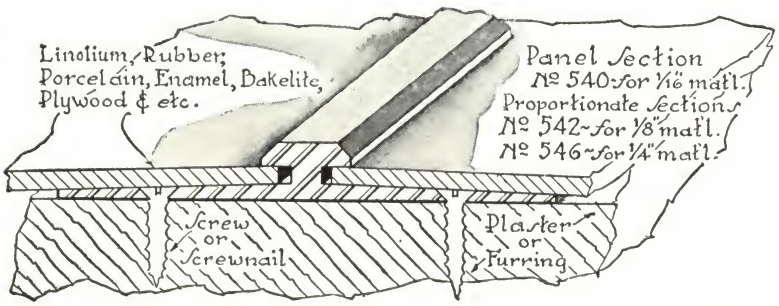
WOOSTER ONE-PIECE TYPE METAL MOULDINGS

Whether the design be simple or intricate, Wooster Metal Mouldings best contribute to interpret it to the satisfaction of both architect and client; for the Wooster line includes a type and a size to produce any desired effect.

This One-Piece Type is particularly easy to install, as it is applied direct to the wall, and when the material is in place, no screw or nail is visible. Designed primarily for flexible materials, it has proved quite as efficient for rigid materials, such as Plywoods, Hardboards, Structural Glass, Bakelite Laminated Panels, Porcelain Enamels, etc. A wide range of standard sizes to accommodate materials of various thicknesses is constantly carried in stock.

A patented feature, exclusive with Wooster, is the "Feather-Edge" Flange Base. This affords a great advantage in presenting ample space for securing fastenings to furring, the wings of the moulding grip and hold the material firmly in place.

Wooster Metal Mouldings, One-Piece Type, made of White Metal Alloy in integral units, are sturdy and rigid, and their beauty delights the eye. Three standard finishes—Woosterlite High Luster, Satin, and Matte. Also made in Wooster Alumilite colors.



Pat. Nos. 1722660, 1910554

CAP
White Alloy
No. 500—1/16"
No. 501—3/32"
No. 502—1/8"
No. 503—5/32"
No. 506—1/4"

WAINSCOT
White Alloy
No. 510—1/16"
No. 512—1/8"
No. 516—1/4"
Brass
No. 1516—1/4"

OUTSIDE CORNER
White Alloy
No. 530—1/16"
No. 532—1/8"
No. 533—5/32"
No. 536—1/4"
Brass
No. 1536—1/4"

INSIDE CORNER
White Alloy
No. 520—1/16"
No. 522—1/8"
No. 523—5/32"
No. 526—1/4"
Brass
No. 1526—1/4"

INSIDE CORNER
White Alloy
No. 622A—1/8"

INSIDE CORNER
White Alloy
No. 622B—1/8"

INSIDE CORNER
White Alloy
No. 622C—1/8"

INSIDE CORNER
White Alloy
No. 622—1/8"

COVE
White Alloy
No. 550—1/16"
No. 552—1/8"

PANEL
White Alloy
No. 540—1/16"
No. 541—3/32"
No. 542—1/8"
No. 543—5/32"
No. 546—1/4"
Brass
No. 1546—1/4"

CLIP-BASE TYPE WOOSTER METAL MOULDINGS

The Clip-Base Type effectively surmounts every installation difficulty. With it, Wooster Metal Mouldings can be applied with any type of wall material anywhere, and attain the finest effects desired by the architect or builder. No special skill or tools are required. Installation is greatly simplified and costs reduced to rock bottom.

Note these three simple operations:

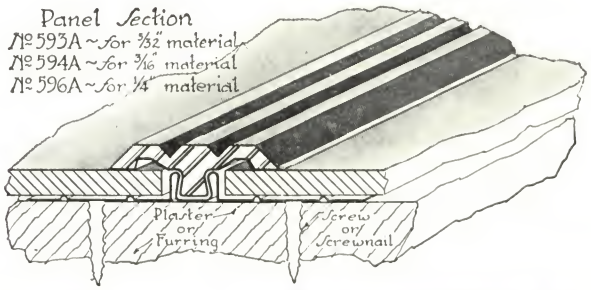
1. Apply Clip-Base in position predetermined by size of material.
2. Apply the wall covering as directed by the manufacturer.
3. Snap moulding on to the Clip Base.

Wooster Metal Mouldings with Clip-Base Type impart new beauty to and bring out the fullest decorative possibilities of all kinds of flexible and rigid materials, such as Linoleum, Rubber, Bakelite, Asbestos Tile, Plywood, Hardboard, Glass, Porcelain Enamel, etc. They contribute a note of striking beauty that is the very essence of modern design.

Standard sections accommodate materials from 1/16" to 1/2"; special sections are obtainable for materials of greater thickness.

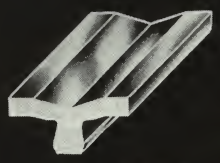
Made with plain surfaces in White Alloy, Yellow Brass and Stainless Steel.

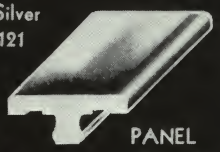
Fluted surfaces are available in White Alloy and Yellow Brass. White Alloy sections may be obtained in Wooster Alumilite colors.



U. S. Pat. No. 1977073 United Kingdom of Great Britain Pat. No. 20135—34

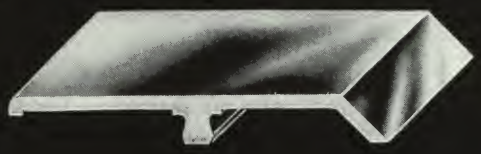
PANEL or INLAY
White Alloy
No. 10-068
Brass or
Nickel Silver
No. 10-121





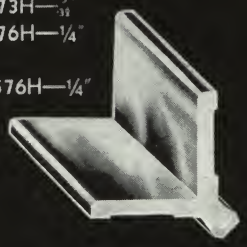
PANEL
White Alloy
No. 590H—1/16"
No. 592H—1/8"
No. 593H—3/32"
No. 596H—1/4"
Brass
No. 1596H—1/4"

WAINSCOT
White Alloy
No. 560H—1/16"
No. 562H—1/8"
No. 563H—3/32"



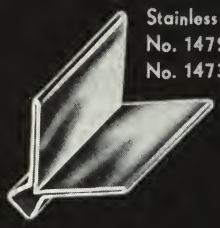
WAINSCOT
White Alloy
No. 563J—3/32"

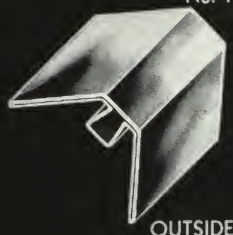
INSIDE CORNER
White Alloy
No. 570H—1/16"
No. 572H—1/8"
No. 573H—3/32"
No. 576H—1/4"
Brass
No. 1576H—1/4"



OUTSIDE CORNE
White Alloy
No. 580H—1/16"
No. 582H—1/8"
No. 583H—3/32"
No. 586H—1/4"
Brass
No. 1582H—1/8
No. 1586H—1/4

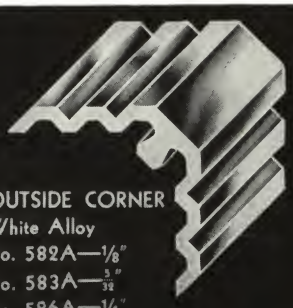
INSIDE CORNER
Stainless Steel
No. 1472—1/8"
No. 1473—3/32"



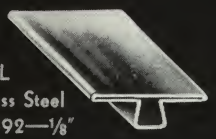


OUTSIDE CORNER
Stainless Steel
No. 1482—1/8"
No. 1483—3/32"

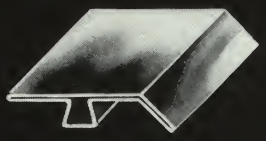
PANEL
White Alloy
No. 592A—1/8"
No. 593A—3/32"
No. 596A—1/4"
No. 599A—1/2"
Brass
No. 1593A—3/16"



OUTSIDE CORNER
White Alloy
No. 582A—1/8"
No. 583A—3/32"
No. 586A—1/4"
No. 589A—1/2"
Brass
No. 1583A—5/32"



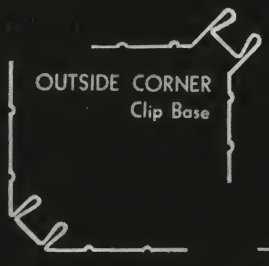
PANEL
Stainless Steel
No. 1492—1/8"
No. 1493—3/32"



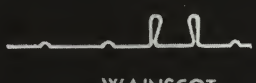
WAINSCOT
Stainless Steel
No. 1462—1/8"
No. 1463—3/32"

INSIDE CORNER
White Alloy
No. 572A—1/8"
No. 573A—3/32"
No. 576A—1/4"
No. 579A—1/2"
Brass
No. 1573A—5/32"

WAINSCOT
White Alloy
No. 562A—1/8"
No. 563A—3/32"
No. 566A—1/4"
No. 569A—1/2"
Brass
No. 1563A—5/32"



OUTSIDE CORNER
Clip Base



WAINSCOT
Clip Base

INSIDE CORNER
Clip Base

PANEL
Clip Base

These Clip Base Sections used with all sections listed on this page.

WOOSTER
NOSINGS AND EDGINGS

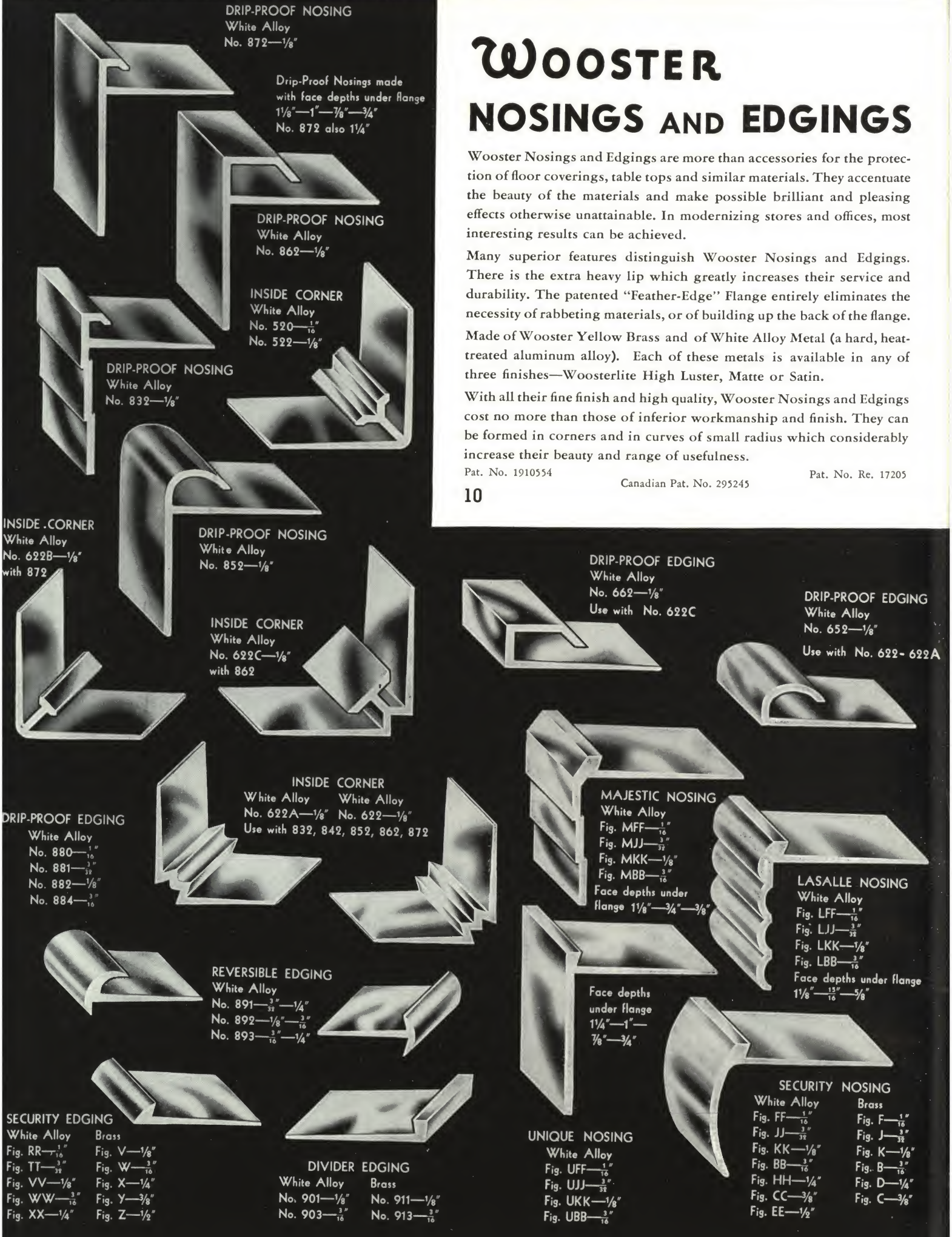
Wooster Nosings and Edgings are more than accessories for the protection of floor coverings, table tops and similar materials. They accentuate the beauty of the materials and make possible brilliant and pleasing effects otherwise unattainable. In modernizing stores and offices, most interesting results can be achieved.

Many superior features distinguish Wooster Nosings and Edgings. There is the extra heavy lip which greatly increases their service and durability. The patented "Feather-Edge" Flange entirely eliminates the necessity of rabbeting materials, or of building up the back of the flange.

Made of Wooster Yellow Brass and of White Alloy Metal (a hard, heat-treated aluminum alloy). Each of these metals is available in any of three finishes—Woosterlite High Luster, Matte or Satin.

With all their fine finish and high quality, Wooster Nosings and Edgings cost no more than those of inferior workmanship and finish. They can be formed in corners and in curves of small radius which considerably increase their beauty and range of usefulness.

Pat. No. 1910554 Canadian Pat. No. 295245 Pat. No. Re. 17205



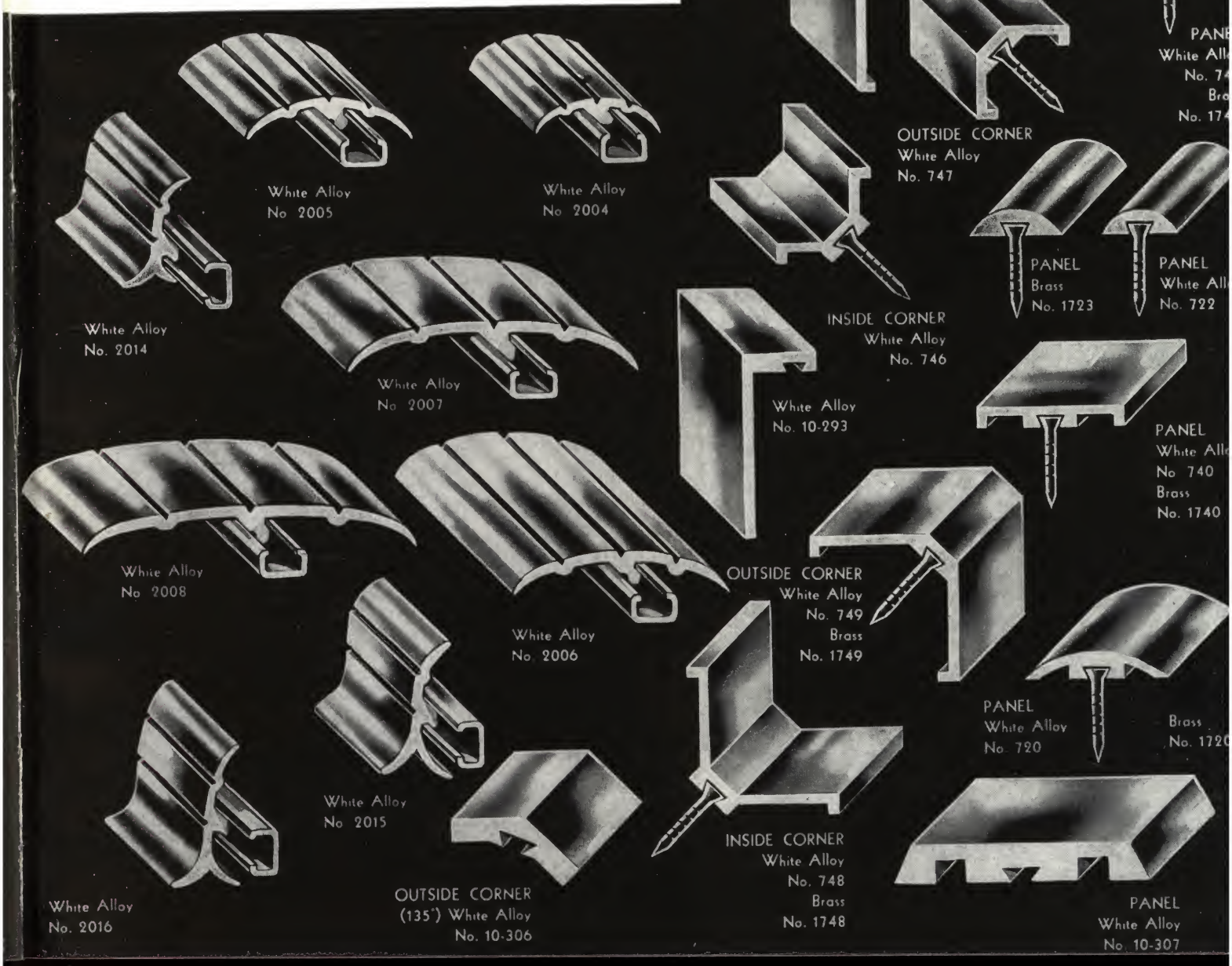
DRIV-ON AND BOLT-ON TYPE Wooster METAL MOULDINGS

For simplicity and ease of application, nothing quite equals Wooster Driv-On or Wooster Bolt-On Mouldings. And their beauty is not excelled by that of any other type. These mouldings present the architect and designer the utmost latitude in designing modern interiors of Hotels, Clubs, Stores and Residences. These mouldings also add new beauty to Cabinets, Counters, Desks, and Tables, wherever, whenever it is desired to strike the modern note in design.

DRIV-ON—Wooster Driv-On Mouldings are fitted with nails securely fastened 8" apart throughout the length of the moulding. Nail heads are tightly clinched and are entirely concealed in the grooved base. No. 13 nails, 9/16" long are furnished unless otherwise specified. Other sizes and different spacings may be had on order.

BOLT-ON—Wooster Bolt-On Metal Mouldings are particularly adapted for use on metal grille work, metal frames, etc. Where nailing is impracticable, No. 3 Machine Screws are securely fastened in the base of the mouldings in the same manner as the nails in the Driv-On type. Any length and spacing are obtainable,

Special designs and shapes embodying Wooster Driv-On or Wooster Bolt-On features may be obtained if desired. All sections here illustrated may be produced in Architectural Bronze. White Alloy sections are also available in Wooster Alumilite colors.



WOOSTER

PRODUCTS INCORPORATED, WOOSTER, OHIO

Representatives in the principal cities

New York office: 101 Park Ave.

Chicago office: 324 W. Washington St.

HASLETT CHUTE & CONVEYOR CO.

Aluminum Clothes Chutes; Steel Rubbish Chutes; Spiral Package Chutes; Spiral and Tubular Fire Escapes; Roller Conveyor; Power Driven Conveyors

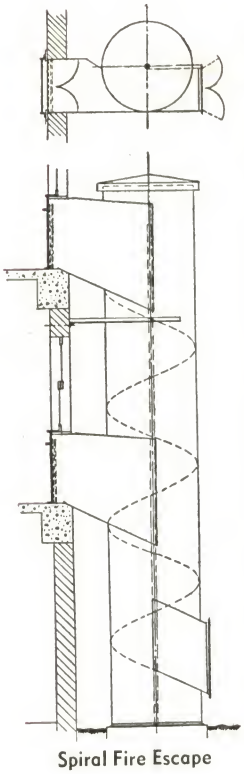
OAKS, PA.

SALES OFFICES IN ALL PRINCIPAL CITIES

For Pages on Clothes, Rubbish and Package Chutes, see File Index

SPIRAL FIRE ESCAPES

Approved By The Underwriters Laboratories of Chicago



Spiral Fire Escape

Standard Sizes—5 ft. diameter, 28 in. wide trough for ambulatory installations; and 7 ft. diameter, 40 in. trough for mattresses.

Housing—Diameter shall be of 12-gauge blue-annealed steel for the lower 2 ft.; the next 6 ft. of 14-gauge blue-annealed; and the remainder of 16-gauge blue-annealed steel. All horizontal joints shall be offset and lapped to shed water on the otuside and be in alignment and smooth on the inside. All vertical joints to be lapped in direction of travel and riveted. All rivets smooth on the inside.

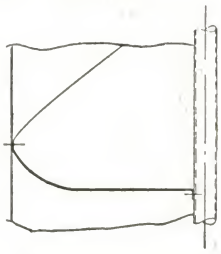
Trough—Shall be concave in shape —wide, fabricated in stamped tapered steel plates of 16-gauge galvanized, and lapped in direction of travel. Outer edge shall be banked and riveted to housing. Inner edge shall be flanged down and secured to core pipe with cadmium plated machine screws.

Roof—Shall be conical in shape, 8 in. greater in diameter than chute, and constructed of 16-gauge blue-annealed steel. A clearance of 2 in. shall be provided between the top and housing for ventilation.

Core—Shall be 3 in. standard weight black pipe with holes drilled and tapped for trough plate bolts.

Intakes—Shall be tangent with housing 36 in. wide by 46½ in. high on ambulatory installations and 44 in. wide by 46½ in. high on hospital type. Top and sides to be of 16-gauge blue- annealed steel, and bottom shall be of 16-gauge galvanized steel.

Intake Door Assembly—Mouth of intake shall be provided with two sets of double leaf 1 in. thick, 7-ply, laminated wood doors, one door provided with astragal. Doors shall swing in direction of travel on 3x3 in. cadmium plated, brass pin butts. A 2½ x 2 x ¼ in. angle iron shall be bolted vertically at the side of each door opposite the hinges. A second pair of doors shall be hinged on the outer edge of the angle iron with 3 x 3 in. cadmium-plated brass pin butts. The outer edge of these doors shall rest against the angle irons and the inner edge shall fit snugly together and the doors be in alignment when closed. A spring shall be provided between the two pairs of doors, to hold them in the same relative position. No Panic Locks or any Hardware required to hold Doors in closed position. Doors cannot be opened from chute side.



Section Through Spiral Fire Escape

A 15/16 in. diameter swing bar shall be placed horizontally across the door opening near the top and be securely fastened to the frame.

Exit—Discharge shall be tangent with the housing, not less than 48 in. high, and the width to be not less than the width of the trough, reinforced with 2 x 2 x ¼ in. angle iron frame. Bottom of doors to be approximately 15 in. above bottom of grade. Reinforced, double leaf doors of 10-gauge blue-annealed steel, hinged to angle frame with 3 x 3 in. cadmium-plated brass pin butts. On mattress type a 44 in. wide by 96 in. long discharge table shall be attached to the exit. Table to be sloped 1 in. in 12 in., and shall rest on concrete footing about 4 in. above grade.

Braces—Housing shall be braced to building wall by 2 x 2 x ¼ in. angle-irons, not over 16 ft. apart. Braces fastened to wall with ½ in. diameter galvanized through rods.

Painting—All iron and steel, except galvanized, shall be given one coat of aluminum paint.

Installation—Chute shipped completely knocked down but must be erected under direct supervision of the manufacturer. Concrete foundation, outside diameter 10 in. greater in diameter than chute, inside diameter 10 in. less in diameter than chute, and shall extend approximately 3 in. above grade to not less than 2 ft. 6 in. below grade. An independent foundation 12 in. square extending not less than 2 ft. 6 in. below grade shall be provided for center core.

TUBULAR FIRE ESCAPES

Approved By The Underwriters Laboratories of Chicago

Standard Sizes—30 in. diameter for single entrance, and 38 in. diameter for multiple entrance installations, 38 in. diameter for all mattress installations.

Tube—Sections shall not be less than 47 in. long of 16-gauge blue-annealed steel. Longitudinal seams continuously welded. Angle rings, 1½ x 1½ x ⅛ in. shall be welded to each end of tube. Angle at bottom continuously welded and at top tack welded. A channel iron weather-cap not more than 7/16 x ⅜ x 1/16 in. shall be placed over all joints formed by the upright legs of the angle-iron rings.

Intakes—39 in. diameter chute intakes shall be 36 in. wide by 46½ in. high. 38 in. diameter chute intakes to be 44 in. wide by 46½ in. high.

Intake Bonnets — To be constructed of 16-gauge blue-annealed steel, welded into single unit, with ventilator at the top.

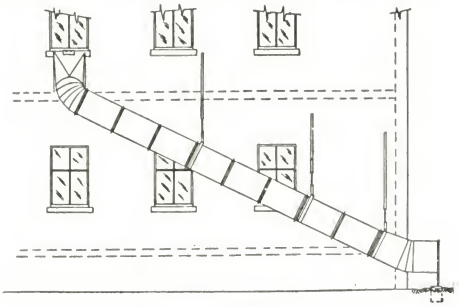
Intake Door Assembly—Same as specified for spiral fire escapes.

Elbows—16-gauge blue annealed steel welded into a single unit.

Easement—An easement shall be provided at lower end, constructed of 16-gauge blue-annealed steel, with support constructed of not less than ¼ in. steel plate, 15 in. wide by 15 in. high, fastened to the end of easement and resting on a concrete foundation at grade level.

Supports—Hanger brackets spaced not more than 12 ft. apart shall be provided to support the escape from building wall. To consist of a ⅝ in. diameter rod with suitable turnbuckle, a ¼ x 2 in. steel flat rolled to the diameter of the tube, and a 2 x 2 x ¼ in. angle strut from wall.

Construction—Chute to be water-tight with all units welded and *hot dip galvanized* after fabrication. No painting is necessary.



Tubular Fire Escape

Catalogues Sent on Request

ESTABLISHED IN 1876

LOGAN CO.

Spiral Slide and Tubular Fire Escapes

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REPRESENTATIVES IN PRINCIPAL CITIES

Products

LOGAN SPIRAL SLIDE ESCAPES for use on office buildings, apartments, hotels, schools, orphanages, hospitals and institutions.

LOGAN TUBULAR FIRE ESCAPES for schools and institutions.

LOGAN CHUTES (Fire Escapes, Tubular and Spiral).

For Logan Ornamental Iron Work, see File Index.

Facilities

A long established firm, equipped to execute contracts in any part of the country. We erect the escape complete.

Advantages of the Spiral Slide Escape

Has an exit capacity three times greater than an ordinary stairway, but uses only 40% as much floor space.

The cost compares favorably with pressed steel stairs. In many cases the spiral escape is much less in cost.

There are no steps, consequently there is no chance for stumbling or falling. Escape can be entered from many floors at the same time. There is no acceleration, therefore escape can be used on thirty-story buildings just as safely as on buildings of one or two stories.

Architects everywhere are now using the Logan Spiral Escape to solve their emergency exit problem. They are designing the stairways to handle normal load only—emergency exit capacity furnished by Logan Spiral Slide Escape. It saves more than half the space. Exit capacity three times greater than average stairway.

30-Story Spiral Escape in Ramsey Tower, Oklahoma City

WALTER AHLSCHLAGER, Architect

Specifications—Spiral Slide

The fire escape shall be the Logan Spiral Slide Escape made by LOGAN CO., Louisville, Ky. It shall be placed upon a concrete foundation.

The escape proper shall be entirely of steel, 5 ft. in diameter, placed as shown on plans, and shall have one entrance at each floor above the first.

The cylinder shall be of No. 12 U. S. Standard gauge sheet steel, for the first 18 in.; the next 6 ft. of No. 14 gauge, and the remainder of No. 16.

The spiral slide shall be of No. 16 gauge galvanized sheet properly banked at outside and securely attached to a center core of 3-in. core inside diameter standard black pipe. Slide to be dished so as to prevent contact with outside shell and is to be made in overlapping sections so it will present no crevices or cracks.

Entrance doors shall be wood core metal covered, in pairs, equipped with single action spring hinges. *(Omit this paragraph on outside installations.)*

"Doors can be equipped with panic bar locks, electric locks or entrance lights at additional expense—these provide protection against falling through entrance doors."

Exit doors shall be one leaf opening outward and provided with brass automatic inside latch with touchplate to operate by the pressure of the smallest child.

The entire escape shall be manufactured in assembled sections about 7 ft. high, with an angle ring at the top and bottom of each section, shall be set up at the factory and riveted permanently together to insure proper fitting, and each section properly marked to correspond with a setting diagram to be furnished by manufacturers. There shall be no projections of any sort on the upper surface of slide; all rivets being recessed and all edges of sheets ground smooth.

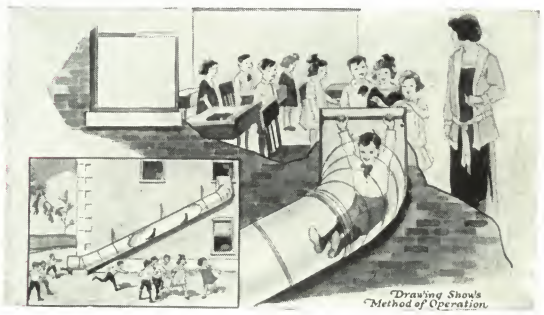
Entire escape, except slide, which is galvanized, shall have one coat of best mineral paint at factory, and sufficient additional paint furnished to give a second coat after erection.

For Exterior Installations Add These Specifications—The roof shall be conical in shape of No. 16 gauge projecting not less than 3 in. beyond cylinder. Runway floor shall be of perforated sheet steel not less than No. 14 gauge on suitable angle framing with an enclosed vestibule provided at each entrance with entrance doors in two leaves each, arranged to swing in, and provided with springs.

Near the second or third story floor line and for each two stories above this point, the escape shall be securely braced to the building by a band and tie rod extending through wall and a strut of 3-in. inside diameter pipe with cast iron bearing shoes for cylinder and wall.

Note: Hospital escape is 7 ft. in diameter. Material sizes given are sufficient for a 65-ft. high escape, 5 ft. in diameter. On higher inside installations, brackets are provided to rest on floor construction. On higher exterior installations, heavier sheet steel is used. Escape weighs 100 lbs. a vertical foot in the 5-ft. diameter.

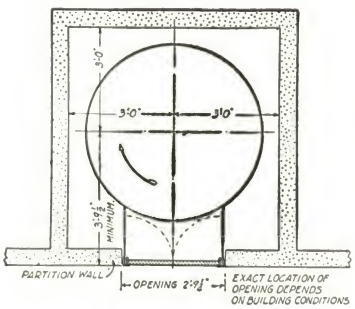
TUBULAR ESCAPE



Tubular Slide Fire Escape (Patented)

Tested by Underwriters' Laboratories, Inc., approved and listed as Standard

ENTRANCE PLAN FOR LOGAN SPIRAL



Plan of Entrance

Logan Spiral Slide Escape

Logan Spiral is not an experiment. Thousands of installations have been made and found more than satisfactory. Note particularly; no dizziness, no heating of trouser seat, no increase in momentum—even on tall buildings. Write for catalog giving layouts and dimension plans

Right:

Outside Installation, Standard 5-ft. Diam.

For hospitals a 7-ft. diameter handles patients on 36-in. mattress

Specifications—Tubular Slide

School Type—Entrance to the escape to be 30 in. wide, 42 in. high; sections to be 30 in. in diameter and not more than 38 in. long and have 1½x1½x⅛-in. angle iron rings riveted to each end for joining sections. Angle iron rings to be bolted together with ⅜x1 in. bolts, udelyte finish. A channel iron band is placed over the top of the angle iron rings to make the joint watertight. The elbow shall have a throat radius of 8 in. The easement or lower end breaks from a 30° angle to horizontal, and is about 6 ft. long; it flares from a 30-in. diameter to oval shape 36 in. high by 30 in. wide. The incline of the tube is about 30°.

Entrance on inside of building to be closed with double doors 15 in. wide, 42 in. high, weatherstripped, equipped with panic bolt hardware, operated with push bars on each door, doors to swing into entrance of the escape. A horizontal swing bar shall be placed near the top of the entrance, just outside the doors. Swing bar to be ¾ in. in diameter.

Hospital Type—Same as school type, except change in measurements as specified below.

Diameter of tube to be 36 in. Entrance shall be 40 in. wide, 45 in. high at inside wall line of building and flare to 36 in. diameter at the outer extremity. Elbow shall have a throat radius of 40 in. The easement, or lower end, breaks from 38° angle to horizontal and is about 9 ft. long, rests on a concrete base. The incline of the tube is about 38° to horizontal.

Complete detailed specifications on request.

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